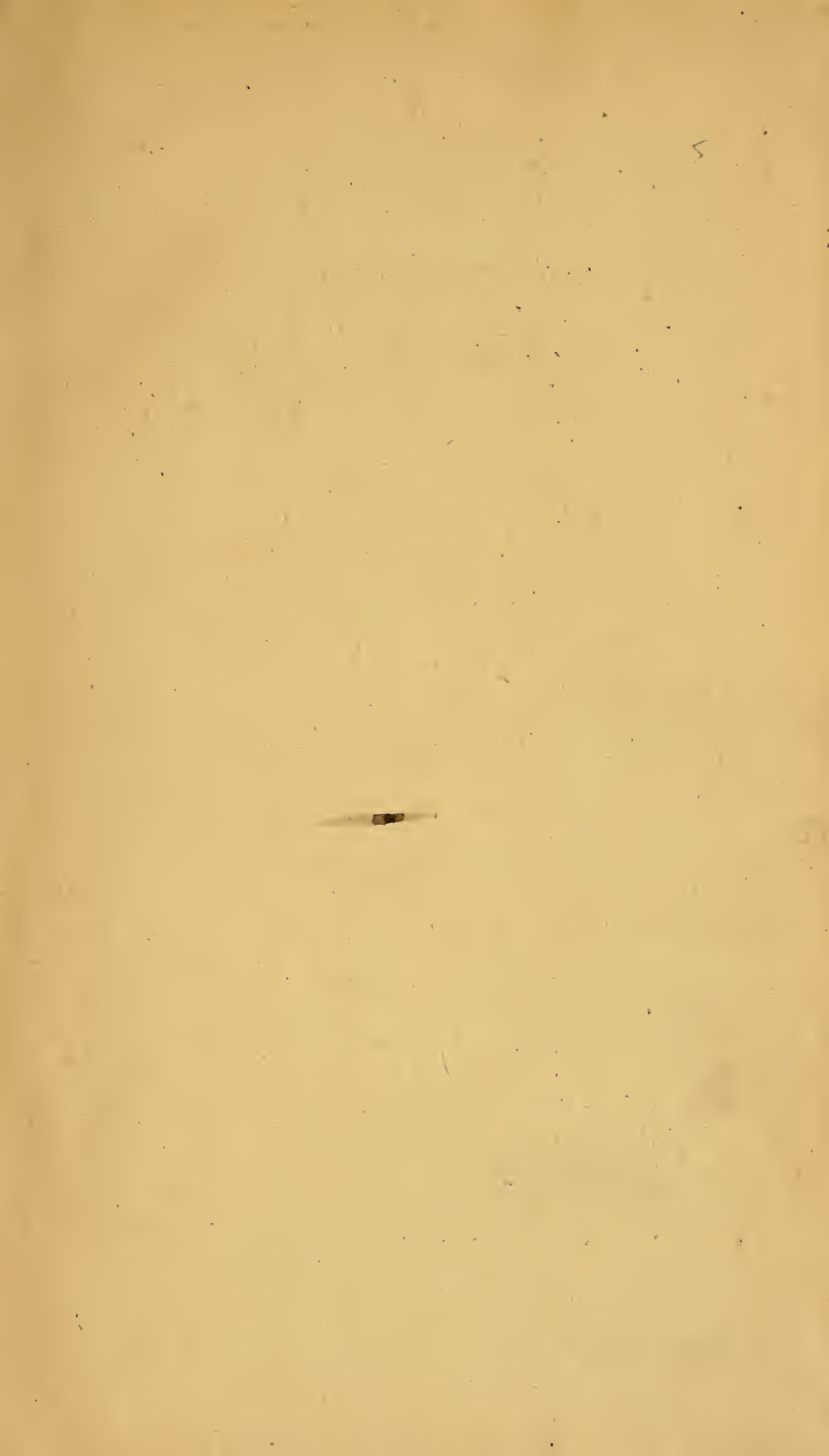



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EIGHTH ANNUAL REPORT

OF THE

WATER COMMISSIONER

FOR THE YEAR 1902-1903.

OFFICE OF THE WATER COMMISSIONER,  
CITY HALL, BOSTON, February 1, 1903.

HON. PATRICK A. COLLINS,

*Mayor of the City of Boston :*

SIR, — I submit herewith the eighth annual report of the Water Commissioner for the year ending January 31, 1903.

The total receipts of the department for the year (including \$200,000 credited from taxes) were \$2,608,378.02, and the total expenditures were \$2,546,608.90, the balance of \$61,769.12 being carried over to the next year.

The increase from sales of water over the previous year was \$92,307.67.

The amount expended for current expenses and extensions for the year was \$742,973.08, being a decrease of \$127,021.16 from the previous year.

The Metropolitan Water Assessment was \$1,274,105.31, an increase of \$104,999.69 over that for last year.

The net water debt on this date is \$607,384.06, it having been decreased by the sum of \$322,083.45 during the year, and there are now outstanding water loans to the amount of \$9,501,000.

The Water Sinking Fund being ample to take care of the present water debt, there was no sinking fund requirement for the year.



Owing to the many changes in and additions to various underground systems which are continually being made, the question of the safe maintenance of the water mains has become a serious problem, and the work of the department has thereby grown more difficult and expensive. Quite a number of changes in water mains of considerable extent were made necessary on account of subway construction in State street, and by the abolishment of grade crossings at Blue Hill avenue and Oakland street. The various kinds of pavement now generally in use, such as asphalt, pitch and pebble, and cement with concrete base, also tend largely to increase the expense of carrying on the department.

The work of relaying mains too small for present demands made upon them for fire protection, and of replacing mains weakened by action of the soil in which they were laid, has received special attention, resulting in a very great improvement in the fire service of the city. Some of the notably weak places in the pipe system have already been strengthened, but much work of this kind still remains to be done to adequately meet the demands of the future.

The demand for the high service is constantly increasing, and a number of extensions of high-service mains have been made in various parts of the city proper, necessitated by the installation of fire pipe systems in high buildings.

A close inspection has been maintained in all cases where pipes have been exposed by the operations of corporations, contractors, etc., and constant care has been exercised to prevent the conduits and other underground fixtures of said corporations, etc., from being constructed in such a manner as to render the water pipes inaccessible or liable to damage from contact. The construction of the new high-level surface drains in certain sections of the city has necessitated a great many changes in water pipes at considerable expense to allow of the uninterrupted passage of said drains.

Many of the old-style Boston hydrants, obsolete in type and of insufficient capacity, have been abandoned and replaced by the more modern post hydrants, of which 388 have been established during the year. In the past the department has experienced much trouble from the indiscriminate use of hydrants by careless or mechanically ignorant persons outside of the Water or Fire Departments, such use almost invariably resulting in injury to the hydrants, thus impairing their use and causing delay in case of fire. This trouble has been remedied to a great extent by restricting the use of hydrants, outside of the Fire Department, to only those who could show a badge of authority from the Water

Commissioner. The aid of the Police Department has been requested in the enforcement of this restriction. A force of men were kept at work during the cold weather inspecting the hydrants daily for the purpose of keeping them in constant readiness for use in fire extinguishment.

A special force has been kept at work much of the time during the past year in blowing off the stagnant water from the various dead-ends throughout the city, this work being carried on mostly at night in order to avoid inconvenience to water-takers. These dead-ends were "blown off" 1,132 times, or double the number of times for the year previous. The ends are being abolished as fast as practicable by connecting them so as to make a circulation of water.

In the relaying of mains, large quantities of old pipes accumulate, which, in most cases being of no further use, are carted to the yard, broken up and sold for old junk. The equitable and very satisfactory method of selling this junk at auction has been continued, and a further improvement made by the insertion of a clause in the terms of sale specifying that no allowance will be made for dirt, and that the junk must be bought and paid for just as it is at the time of sale. This method has proved very successful, inasmuch as it eliminates a much-vexed question which was always a source of trouble.

In cases where it becomes necessary to shut off water while making connections of mains, etc., in the business sections of the city, the work is, as far as practicable, done after working hours, so as to avoid as far as possible the interruption of business.

To avoid the spread of disease among horses the watering troughs throughout the city have been regularly emptied, and their interiors burned with a torch, thus destroying any germs that may have been deposited or developed therein.

The shops at the Albany-street yard have been kept running throughout the year in the manufacture of gates, hydrants, cocks and other fittings necessary to the maintenance of the works.

Reports of the Superintendents of the Income and Distribution Divisions showing details of work performed, also report of the Engineer, will be found herewith annexed.

Respectfully,

EUGENE S. SULLIVAN,

*Water Commissioner.*

Total receipts from all sources . . . . .	\$2,608,378 02
Total expenditures for all purposes . . . . .	2,546,608 90
Balance at end of year . . . . .	<u>\$61,769 12</u>

## TOTAL RECEIPTS OF THE YEAR BY SOURCES.

Sales of water . . . . .	\$2,280,358 09
Interest on Water Works fund . . . . .	65,634 62
Service, elevator, fire, motor and stand-pipes, and repairs, labor, materials, etc., for miscellaneous work . . . . .	44,934 86
Sales of old materials, etc. . . . .	7,480 45
Difference on cost of laying main pipes . . . . .	3,182 97
Fees for summonses . . . . .	2,089 00
Shutting off and letting on water, account of repairs . . . . .	1,733, 50
Shutting off and letting on water, account of non-payment of bills . . . . .	1,612 00
Use of West Roxbury pumping plant . . . . .	820 00
Interest on deposits . . . . .	288 91
Board of City Engineer's horse . . . . .	156 00
City's proportion of entrance fees of other cities and towns for use of Metropolitan water system . . . . .	87 62
	<u>\$2,408,378 02</u>
Additional amount credited from taxes . . . . .	200,000 00
	<u>\$2,608,378 02</u>

## TOTAL EXPENDITURES.

Current expenses, and extensions . . . . .	\$742,973 08
Metropolitan water assessment . . . . .	1,274,105 31
Interest on funded debt . . . . .	527,123 95
Refunded water rates . . . . .	2,406 56
	<u>\$2,546,608 90</u>

Details of Expenditures under the appropriation for Current Expenses and Extensions, for the fiscal year ending January 31, 1903. (From Revenue.)

## Salaries and wages:

Augustus P. Martin, Commissioner, to March 13, 1902, inclusive . . . . .	\$1,013 89
Eugene S. Sullivan, Commis- sioner, from March 17, 1902, . . . . .	3,944 44
	<u>\$4,958 33</u>

## Assistant Commissioners:

M. P. Freeman, to March 8, 1902, inclusive . . . . .	\$566 67
William H. Oakes, to March 8, 1902, inclusive . . . . .	566 67
Eugene S. Sullivan, from March 10 to 16, 1902, in- clusive . . . . .	58 33
Isaac Rosnosky, from March 10, 1902 . . . . .	2,425 00
John J. Leahy, from March 21, 1902 . . . . .	2,333 33
	<u>5,950 00</u>

Carried forward . . . . . \$10,908 33



<i>Brought forward</i> . . . . .	\$10,908 33	
Chief Clerk and Secretary . . . . .	3,000 00	
Employees . . . . .	522,074 27	
	<hr/>	\$535,982 60
Water-pipes and other castings . . . . .		108,264 12
Stable:		
Hay, grain, straw, etc. . . . .	\$7,724 01	
Horseshoeing, veterinary services, etc. . . . .	2,502 46	
Repairs of vehicles . . . . .	1,870 39	
Horses, purchase of . . . . .	1,230 00	
Harnesses and repairs . . . . .	467 31	
	<hr/>	13,794 17
Lead and lead pipe . . . . .		13,213 96
Tools, machinery, repairs of same, iron, steel, and hardware . . . . .		11,017 08
Lumber . . . . .		8,438 13
Repairs and alterations of buildings, streets, and other structures . . . . .		7,658 83
Teaming and freight . . . . .		7,097 53
Travelling expenses, and transportation of employees . . . . .		5,526 26
Printing . . . . .		4,149 39
New meters . . . . .	\$2,130 00	
Repairs and extra parts of meters . . . . .	1,123 27	
	<hr/>	3,253 27
Fuel . . . . .		2,880 78
Blasting and excavating pipe-trenches . . . . .		2,815 48
Gravel and crushed stone . . . . .		1,920 98
Telephone service . . . . .		1,451 44
Stationery, postage, etc. . . . .		1,290 15
Salt . . . . .		1,079 80
Oils . . . . .		790 77
Board of injured man . . . . .		765 02
Rents . . . . .		547 50
Taxes . . . . .		363 00
Gas . . . . .		333 24
Bricks . . . . .		258 04
Advertising . . . . .		247 25
Cement and sand . . . . .		210 35
Professional and expert services . . . . .		191 00
Breaking up water-pipe . . . . .		159 62
Waterproof clothing . . . . .		134 28
Salt hay . . . . .		127 80
Drain pipe . . . . .		58 98
Ice . . . . .		46 90
Furniture . . . . .		33 40
Premium on surety bonds . . . . .		25 00
Land, Whitehall pond, taken in 1890 . . . . .		50 00
		<hr/>
		\$734,176 12
Damages . . . . .		8,796 96
		<hr/>
		\$742,973 08
		<hr/>

There was also expended by the Water Department, the sum of \$3,031.03, under an order of the City Council of May 26, 1902, appropriating \$5,000 from the Reserve Fund for "Ice for Drinking Fountains."

## COST OF CONSTRUCTION AND CONDITION OF THE WATER DEBT.

Cost of construction of Water Works to February 1, 1902 . . . . .	\$15,782,616 80
Cost of construction of Water Works to February 1, 1903 . . . . .	15,908,322 79
Increase during the year . . . . .	<u>\$125,705 99</u>

Stock on hand February 1, 1902 . . . . .	\$132,494 51
Stock on hand February 1, 1903 . . . . .	114,617 38
Decrease during the year . . . . .	<u>\$17,877 13</u>

The outstanding Water Loans February 1, 1902, were . . . . .	\$11,351,917 28
The outstanding Water Loans February 1, 1903, were . . . . .	9,501,000 00
Decrease during the year . . . . .	<u>\$1,850,917 28</u>

The Water Sinking-Fund February 1, 1902, was . . . . .	\$10,422,449 77
The Water Sinking-Fund February 1, 1903, was . . . . .	8,893,615 94
Decrease during the year . . . . .	<u>\$1,528,833 83</u>

Net Water Debt February 1, 1902 . . . . .	\$929,467 51
Net Water Debt February 1, 1903 . . . . .	607,384 06
Decrease during the year . . . . .	<u>\$322,083 45</u>

The outstanding Water Loans on this date, February 1, 1903, are as follows:

Loans.		Date of Maturity.	Amount.
6	per cent. Currency,	Due April, 1903 . . . .	\$886,000 00
6	" " "	" Jan., 1904 . . . .	8,000 00
6	" " "	" Jan., 1905 . . . .	3,000 00
6	" " "	" April, 1905 . . . .	53,700 00
6	" " "	" July, 1905 . . . .	10,000 00
6	" " "	" Oct., 1905 . . . .	6,000 00
5	" " Gold Loan,	" Oct., 1905 . . . .	973,000 00
6	" " Currency,	" Jan., 1906 . . . .	82,550 00
6	" " "	" April, 1906 . . . .	8,750 00
5	" " Gold Loan,	" April, 1906 . . . .	549,000 00
5	" " "	" Oct., 1906 . . . .	1,991,000 00
6	" " Currency,	" Oct., 1906 . . . .	4,000 00
6	" " "	" Jan., 1907 . . . .	8,000 00
6	" " "	" April, 1907 . . . .	5,000 00
6	" " "	" July, 1907 . . . .	1,000 00
5	" " Currency Loan,	" Oct., 1907 . . . .	1,000 00
5	" " " "	" April, 1908 . . . .	12,000 00

*Carried forward,*

\$4,602,000 00

WATER DEPARTMENT.

Loans.				Date of Maturity.	Amount.
<i>Brought forward,</i>					\$4,602,000 00
4	per	cent.	Loan,	Due July, 1909 . . .	82,000 00
4½	"	"	"	" Oct., 1909 . . .	268,000 00
4	"	"	"	" April, 1910 . . .	277,000 00
4	"	"	"	" April, 1912 . . .	324,000 00
4	"	"	"	" Oct., 1913 . . .	56,000 00
4	"	"	"	" Jan., 1914 . . .	459,000 00
4	"	"	"	" April, 1914 . . .	18,500 00
4	"	"	"	" Oct., 1914 . . .	16,000 00
4	"	"	"	" April, 1915 . . .	45,700 00
4	"	"	"	" Oct., 1915 . . .	23,000 00
4	"	"	"	" Jan., 1916 . . .	8,000 00
4	"	"	"	" April, 1916 . . .	28,500 00
4	"	"	"	" Oct., 1916 . . .	11,300 00
4	"	"	"	" Jan., 1917 . . .	21,000 00
3½	"	"	"	" April, 1917 . . .	275,000 00
4	"	"	"	" April, 1917 . . .	6,000 00
4	"	"	"	" July, 1917 . . .	7,000 00
4	"	"	"	" Oct., 1917 . . .	158,700 00
4	"	"	"	" Jan., 1918 . . .	20,000 00
4	"	"	"	" April, 1918 . . .	6,300 00
3½	"	"	"	" July, 1918 . . .	100,000 00
4	"	"	"	" Oct., 1918 . . .	95,000 00
4	"	"	"	" April, 1919 . . .	200,000 00
3½	"	"	"	" Oct., 1919 . . .	6,000 00
4	"	"	"	" Oct., 1919 . . .	215,000 00
3½	"	"	"	" Nov., 1919 . . .	122,000 00
3½	"	"	"	" Jan., 1920 . . .	120,000 00
4	"	"	"	" Oct., 1920 . . .	303,000 00
4	"	"	"	" April, 1921 . . .	100,000 00
4	"	"	"	" Oct., 1921 . . .	162,500 00
4	"	"	"	" Jan., 1922 . . .	100,000 00
4	"	"	"	" April, 1922 . . .	75,000 00
4	"	"	"	" Oct., 1922 . . .	202,000 00
4	"	"	"	" Oct., 1923 . . .	26,275 00
4	"	"	"	" Oct., 1924 . . .	526,225 00
3½	"	"	"	" Oct., 1927 . . .	25,000 00
3½	"	"	"	" July, 1929 . . .	410,000 00
Total . . . . .					\$9,501,000 00

## SUMMARY.

3½	per cent.	Loans	.	.	.	.	.	.	.	\$1,058,000 00
4	"	"	.	.	.	.	.	.	.	3,573,000 00
4½	"	"	.	.	.	.	.	.	.	268,000 00
5	"	"	Currency Loans	.	.	.	.	.	.	13,000 00
5	"	"	Gold "	.	.	.	.	.	.	3,513,000 00
6	"	"	Loans	.	.	.	.	.	.	1,076,000 00
Total										<u>\$9,501,000 00</u>

# Cochituate Water Sinking-Fund Receipts.

[SINCE THE ESTABLISHMENT OF THE BOARD OF SINKING-FUND COMMISSIONERS IN 1871.]

YEAR.	From Tax Levy of City Income.	Interest on Investments.	Interest on Bank Deposits.	Water Rates, etc.	Premiums on Loans.	Other Sources.	Totals.
1871. April 30, received from Committee on Reduction of Debt...	\$1,100,000 00	.....	.....	.....	.....	.....	\$1,100,000 00
1871-72..... {	14,325 00						
	Taxes, 9,375 00	\$61,000 00	\$349 67	.....	.....	.....	85,049 67
1872-73 .....	9,000 00	70,137 50	1,017 80	.....	.....	.....	80,155 30
1873-74 .....	30,090 00	76,799 60	2,072 65	.....	.....	.....	108,962 25
1874-75 .....	75,973 28	82,842 25	2,121 13	.....	.....	.....	160,936 66
1875-76 .....	65,554 00	85,470 00	3,617 55	.....	.....	\$386 00	155,027 55
1876-77 .....	234,814 00	86,245 66	4,119 47	\$26,480 18	.....	915 46	352,574 77
1877-78 .....	Taxes, 214,500 00	85,830 85	10,809 31	27,099 92	.....	.....	338,240 08
1878-79 .....	Taxes, 207,456 00	93,264 49	6,181 26	177,195 91	.....	9,874 21	493,971 87
1879-80 .....	.....	90,472 42	5,687 62	214,707 24	.....	4,411 64	315,278 92
1880-81 .....	.....	86,460 00	167 32	195,668 90	.....	1,762 04	284,058 26
1881-82 .....	.....	96,546 35	2,767 90	193,840 36	.....	494 08	293,648 69
1882-83 .....	.....	105,129 51	8,486 33	219,581 72	.....	1,241 04	331,438 60
1883-84 .....	Taxes, 973 00	138,120 90	2,268 22	.....	.....	.....	141,362 12
1884-85 .....	.....	143,049 45	7,510 40	209,258 39	.....	.....	359,818 24
1885-86 .....	.....	156,694 01	5,804 31	120,129 12	.....	442 27	283,069 71



# WATER DEPARTMENT.

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1886-87	Taxes, 75,496 00	181,264 89	2,644 70	297,928 95	.....	5,081 12	562,415 66
1887-88	.....	199,883 90	4,178 16	221,620 11	.....	.....	425,682 17
1888-89	.....	213,048 22	8,958 69	256,013 57	\$11,552 50	.....	489,572 98
1889-90	.....	228,000 83	11,730 60	300,903 00	36,092 50	.....	576,726 93
1890-91	.....	229,509 17	29,763 94	242,675 22	36,530 00	.....	538,478 33
1891-92	.....	175,808 33	22,560 16	275,014 05	.....	78,865 00	552,247 54
1892-93	.....	260,506 20	30,148 34	240,435 00	16,413 50	.....	547,503 04
1893-94	.....	298,224 44	18,133 03	299,467 27	14,621 75	.....	630,446 49
1894-95	.....	312,332 05	18,524 22	297,518 29	.....	9,894 12	638,268 68
1895-96	.....	378,819 55	5,892 29	205,791 00	64,690 00	.....	655,192 84
1896-97	.....	403,840 02	5,225 08	194,740 00	.....	616 50	604,421 60
1897-98	.....	421,928 45	8,337 21	193,395 00	8,833 50	15,877 86	648,372 02
1898-99	.....	417,142 02	5,806 85	193,395 00	.....	8,016 00	624,359 87
1899-1900	.....	383,662 97	7,632 45	209,824 00	29,835 70	2,148 90	633,104 02
1900-1901	.....	397,985 35	15,948 83	206,489 00	.....	.....	620,423 18
1901-1902	.....	325,030 96	31,199 25	.....	.....	*609,000 00	965,230 21
1902-1903	.....	313,707 65	37,297 28	.....	.....	.....	351,004 93
		\$2,037,556 28	\$326,962 02	\$5,016,171 20	\$218,569 45	\$749,026 24	\$14,947,043 18

\* Water Works Fund.

**Cochituate Water Debt, Gross and Net.**

At the Close of Each Fiscal Year.

Fiscal Year.	Gross Debt.	Sinking-funds.	Net Debt.
1847-48 .....	<sup>1</sup> \$2,129,056 32	.....	\$2,129,056 32
1848-49 .....	3,787,328 98	.....	3,787,328 98
1849-50 .....	4,463,205 56	.....	4,463,205 56
1850-51 .....	4,955,613 51	.....	4,955,613 51
1851-52 .....	5,209,223 26	.....	5,209,223 26
1852-53 .....	5,972,976 11	.....	5,972,976 11
1853-54 .....	5,432,261 11	.....	5,432,261 11
1854-55 .....	5,403,961 11	.....	5,403,961 11
1855-56 .....	5,230,961 11	.....	5,230,961 11
1856-57 .....	5,031,961 11	.....	5,031,961 11
1857-58 .....	4,724,961 11	.....	4,724,961 11
1858-59 .....	4,754,461 11	.....	4,754,461 11
1859-60 .....	3,846,211 11	.....	3,846,211 11
1860-61 .....	3,455,211 11	.....	3,455,211 11
1861-62 .....	3,012,711 11	.....	3,012,711 11
1862-63 .....	2,992,711 11	.....	2,992,711 11
1863-64 .....	2,992,711 11	.....	2,992,711 11
1864-65 .....	2,942,711 11	.....	2,942,711 11
1865-66 .....	3,152,711 11	.....	3,152,711 11
1866-67 .....	3,370,711 11	.....	3,370,711 11
1867-68 .....	3,867,711 11	.....	3,867,711 11
1868-69 .....	5,107,711 11	.....	5,107,711 11
1869-70 .....	5,731,711 11	.....	5,731,711 11
1870-71 .....	6,482,711 11	\$1,100,000 00	5,382,711 11
1871-72 .....	6,812,711 11	1,185,049 67	5,627,661 44
1872-73 .....	6,912,711 11	1,268,234 97	5,644,476 14
1873-74 .....	7,863,711 11	1,372,953 62	6,490,757 49
1874-75 .....	8,123,711 11	1,533,890 28	6,589,820 83
1875-76 .....	9,735,711 11	1,560,917 83	8,174,793 28
1876-77 .....	11,548,711 11	1,709,492 60	9,839,218 51
1877-78 .....	11,545,273 98	2,043,764 73	9,501,509 25
1878-79 .....	11,753,273 98	2,143,847 85	9,609,426 13
1879-80 .....	11,697,273 98	1,771,692 92	9,925,581 06
1880-81 .....	11,631,273 98	1,989,300 88	9,641,973 10
1881-82 .....	11,631,273 98	2,281,857 89	9,349,416 09
1882-83 .....	11,955,273 98	2,607,768 46	9,347,505 52
1883-84 .....	12,882,273 98	2,746,505 58	10,135,768 40
1884-85 .....	13,045,473 98	3,106,323 82	9,939,150 16
1885-86 .....	13,491,473 98	3,385,201 26	10,106,272 72
1886-87 .....	14,142,273 98	3,947,616 92	10,194,657 06
1887-88 .....	14,741,273 98	4,373,304 09	10,367,969 89
1888-89 .....	14,941,273 98	4,864,092 54	10,077,181 44
1889-90 .....	15,696,273 98	5,440,819 47	10,255,454 51
1890-91 .....	16,267,773 98	5,979,297 80	10,288,476 18
1891-92 .....	16,423,773 98	6,471,545 34	9,952,228 64
1892-93 .....	16,758,773 98	7,019,058 38	9,739,715 60
1893-94 .....	17,055,273 98	7,649,504 87	9,405,769 11
1894-95 .....	17,761,273 98	8,444,773 55	9,316,500 43
1895-96 .....	18,261,273 98	9,099,966 39	9,161,307 59
1896-97 .....	18,261,273 98	9,704,387 99	8,556,885 99
1897-98 .....	17,911,273 98	9,852,760 01	8,058,513 97
1898-99 .....	17,121,273 98	9,487,119 88	7,634,154 10
1899-1900 .....	17,306,273 98	9,870,223 90	7,436,050 08
1900-1901 .....	11,960,273 98	10,144,647 08	1,815,626 90
1901-1902 .....	11,351,917 28	10,422,449 77	929,467 51
1902-1903 .....	9,501,000 00	8,893,615 94	607,384 06

<sup>1</sup> No account taken of amounts borrowed temporarily from 1846 to 1852 and afterwards funded by the issue of water bonds that figure in this statement.

## Contracts Made and Pending during Year Commencing February 1, 1902, and ending January 31, 1903.

*Contracts marked thus (\*) are completed.*

DATE.	CONTRACTORS.	WORK.	AMOUNT.	PAID ON CONTRACT.		
				Previous Year.	Year 1902-1903.	Total.
1901.						
* Feb. 20,	{ United States Cast Iron { Pipe and Foundry Co.	{ 25 tons 30-inch pipe, B..... 850 " 24-inch " B..... 1,100 " 16-inch " B..... 1,750 " 12-inch " B..... 500 " 10-inch " B..... 800 " 8-inch " B..... 300 " 6-inch " B..... 25 " 4-inch " B..... 10 " special castings.....	@ \$20.40 per ton 2,000 lbs.....	\$80,623 49	\$24,301 00	\$104,924 84
* " 28,	H. P. Nawn .....	{ Teaming, water pipes and materials from { March 16, 1901, to February 1, 1902.....	{ 38 cents per ton, 2,000 lbs., for { short haul..... 80 cents per ton, 2,000 lbs., for { long haul.....	1,372 43	523 30	1,895 73
* Aug. 1,	J. H. McCafferty & Co.	{ Composition castings from August 1, 1901, { to February 1, 1902.....	{ No. 1 @ 21 $\frac{1}{2}$ cents per lb. .... { No. 2 @ 20 $\frac{1}{2}$ " " ..... { No. 3 @ 16 " " .....	7,528 02	3,233 19	10,761 21
* " 1,	Foxboro Foundry Co....	{ Small iron castings from August 1, 1901, to { February 1, 1902.....	{ No. 1 @ 2 $\frac{5}{16}$ cents per lb..... { No. 2 @ 1 $\frac{3}{16}$ " " ..... @ \$1.67 per 100 lbs.....	12,464 09	4,406 83	16,870 92
* " 10,	Osgood & Witherly.....	{ 10 24-inch sleeves..... { 10 48-inch " .....	@ \$1.67 per 100 lbs.....	77 94	279 46	357 40
* Oct. 2,	{ J. H. Long Machine { Company .....	Furnishing 20 16-inch valves.....	@ \$69.50 each.....	635 00	635 00	1,390 00

**Contracts Made and Pending during Year Commencing February 1, 1902, and ending January 31, 1903.—Concluded.**  
*Contracts marked thus (\*) are completed.*

* Dec. 2,	Walburg & Sherry.....	{ Scraping, cleaning and painting inside of } stand-pipe at Orient Heights; painting to consist of two coats of red lead paint and one coat of "Smith's Durable Metal Coating".....	\$187.00 .....	\$187 00	\$187 00
* " 9,	Robert R. Rose.....	{ Scraping, cleaning and painting inside of } stand-pipe at Mount Bellevue. (Same as required at Orient Heights).....	\$224.00 .....	261 75	261 75
* " 17,	Osgood & Witherly.....	Furnishing 10 30-inch sleeves.....	@ 2½c. per lb.....	168 75	168 75
Feb. 10,	Foxboro Foundry Co...	{ Small iron castings for year ending January } 31, 1903 .....	{ No. 1 @ 2 $\frac{7}{16}$ cents per lb..... } { No. 2 @ 1 $\frac{1}{16}$ " " " "..... }	27,121 18	27,121 18
" 7,	H. P. Nawn .....	{ Teaming water pipes and materials for year } ending January 31, 1903. ....	{ 43 cents per ton, 2,000 lbs., for } short haul..... } { 80 cents per ton, 2,000 lbs., for } long haul..... }	1,807 46	1,807 46
* " 10,	William J. Barry.....	Blasting Whiting street, Roxbury.....	@ \$3.90 per cubic yard.....	71 25	71 25
" 20,	J. H. McCafferty & Co..	{ Composition castings for year ending Janu- } ary 31, 1903.....	{ No. 1 @ 19½ cents per lb..... } { No. 2 @ 19½ " " " "..... } { No. 3 @ 14 " " " "..... }	5,758 67	5,758 67
" 21,	{ United States Cast Iron } { Pipe and Foundry Co. }	{ 600 tons 40-inch pipe, B. } 575 " 36-inch " B. } 90 " 30-inch " B. } 500 " 12-inch " B. } 300 " 10-inch " B. } 300 " 8-inch " B. } 10 " 4-inch " B. } 2,375 " straight pipe..... } 10 " special castings .....	@ \$26.45 per ton, 2,000 lbs..... } @ 49.00 " " " "..... }	35,072 70	35,072 70
* " 27,	Thomas Burke.....	Blasting, Washington street, Dorchester.....	@ \$1.89 per cubic yard.....	211 68	211 68
* Mar. 21,	James McDonald.....	Blasting, Washington street, Dorchester.....	@ \$1.73 per cubic yard.....	132 52	132 52



* Apr. 18,	Mechanics' Iron Foun- dry Co.....	10 30-inch sleeves .....	@ 2½ cents per lb.....	.....	\$176 62
* June 13,	Boston Ice Company....	Furnishing ice to drinking fountains.....	@ \$2.25 per ton, 2,000 lbs.†.....	.....	2,882 58
" 25,	Thomas Burke.....	Blasting, Leamington road, Brighton.....	@ \$3.24 per cubic yard.....	.....	230 04
* Sept. 30,	Thomas Burke.....	Blasting, Canterbury street, West Roxbury..	@ \$3.24 per cubic yard.....	.....	104 00
Dec. 17,	John T. Cavanaugh.....	{ Excavate and back-fill 3,600 feet of trench } { for 12-inch pipe at Long Island..... }	@ 55 cents per linear foot.....	.....	

† Paid from special appropriation.

## REPORT OF INCOME DIVISION.

CITY HALL, BOSTON, February 1, 1903.

MR. EUGENE S. SULLIVAN,

*Water Commissioner:*

SIR:— Herewith follows the annual report of the Income Division, Water Department. The report of the Meter Service Division covers the financial year ending January 31, 1903; the remainder of the report is rendered for the calendar year ending December 31, 1902—it being impracticable, owing to the nature of our accounts, to render it for the financial year.

Respectfully submitted,

J. H. CALDWELL,

*General Superintendent Income Division.*

Table I.

*Statement of Water Rates—January 1, 1903.*

Account of Year.	Amount Assessed.	Amount Abated.	Amount Collected.	Balance Outstanding.
1894.....	\$2,163,625 70	\$51,615 19	\$2,112,006 01	\$4 50
1895.....	2,266,519 08	55,409 79	2,211,008 55	100 75
1896.....	2,568,246 04	*95,157 39	2,473,083 65	5 00
1897.....	2,630,413 37	53,864 09	2,576,549 28	.....
1898.....	2,342,793 38	† 235,414 43	2,107,378 95	.....
1899.....	2,414,731 72	† 257,930 16	2,156,246 26	555 30
1900.....	2,197,016 84	56,457 05	2,150,077 39	482 40
1901.....	‡ 2,264,719 20	45,264 09	2,217,654 13	1,800 98
1902.....	‡ 2,325,453 31	20,764 62	2,011,338 69	293,350 00

Above amounts for years 1894, 1895, 1896, and 1897 include both Cochituate and Mystic supply accounts. The contracts to supply Chelsea, Somerville, and Everett with Mystic water were abrogated by the Metropolitan Water Act on January 1, 1898.

\*This amount includes certain City Department accounts, abated by order of the Mayor.

† These amounts include abatements of City Department accounts, under order of the City Council, approved by the Mayor on March 5, 1900.

‡ No City Department accounts in these amounts, such charges having been abolished by an order of the City Council, approved by the Mayor on March 5, 1900.

**Table II.***Number of Classified Water Takers during 1902.*

	Number.
By annual rates.....	93,191
By meter rates.....	4,524
City supplies of all kinds.....	8,664
Total.....	106,379

**Table III.***Kind and Number of Fixtures in Use December 31, 1902.*

	Number.
Bath-tubs.....	78,181
Bowls.....	111,192
Foot-tubs.....	281
Sinks.....	180,809
Taps.....	29,332
Urinals, automatic.....	5,028
“ otherwise.....	389
Wash-tubs.....	124,552
Water-closets.....	169,039
Total fixtures.....	698,803

**Table IV.**  
*Water at Annual Rates.*

CLASSIFICATION.	Number.	Amount Assessed.
Armories.....	1	\$21 50
Bakeries.....	279	3,762 07
Bath-houses.....	1	17 00
Building purposes.....	698	8,901 67
Cemeteries.....	6	30 33
Churches.....	251	2,992 45
Circuses.....	2	126 37
Clubs.....	214	3,007 48
Depots and stations.....	53	1,154 67
Dispensaries.....	1	7 50
Dwelling-houses.....	53,873	797,714 48
Fountains.....	3	25 00
Filling tanks.....	3	24 97
Freight-houses.....	16	178 00
Greenhouses.....	60	1,045 00
Groves.....	1	8 75
Gymnasiums.....	1	46 50
Halls.....	152	2,403 67
Hand hoses.....	8,918	44,590 00
Hospitals and asylums.....	59	5,166 00
Hotels.....	1	350 00
Laundries.....	514	9,778 86
Libraries and museums.....	6	89 00
Manufactories.....	10	99 34
Model houses.....	12,104	263,368 18
Motors.....	4	28 33
Offices.....	1,991	17,781 27
Paving.....	24	194 56
Photographers.....	58	1,281 25
Puddling.....	19	540 01
Razing.....	8	70 66
Restaurants and lunch.....	501	8,698 12
Rinks.....	1	133 51
Saloons.....	515	19,922 55
Schools.....	77	1,301 75
Sewer buildings.....	2	54 10
Shops.....	3,173	28,660 82
Street sprinkling.....	15	525 15
Shipping.....	6	81 38
Stables.....	3,350	23,727 23
Steam and gas engines.....	100	2,104 45
Stores.....	6,119	68,779 28
Theatres.....	1	10 00
Totals ..	93,191	\$1,318,803 21



Table V.

*Water by Meter Rates.*

CLASSIFICATION.	Number.	Quantity of Water Consumed. Cubic Feet.	Amount Assessed.
Bakeries.....	18	1,879,000	\$2,436 00
Bath-houses.....	5	613,000	821 70
Boarding-houses.....	133	7,593,000	10,330 65
Bottling establishments.....	44	2,805,000	3,833 70
Breweries.....	28	23,059,000	28,250 30
Cemeteries.....	4	876,000	1,095 95
Chemicals.....	10	2,429,000	3,046 20
Club-houses.....	38	8,559,000	10,729 00
Distilleries.....	5	1,524,000	1,920 80
Electrical companies.....	14	49,225,000	45,705 00
Elevators and motors.....	507	48,580,000	62,829 47
Factories.....	236	41,985,000	53,600 95
Fish-houses.....	36	2,049,000	2,686 50
Garbage.....	1	1,228,000	1,497 60
Gas-works.....	16	8,940,000	11,010 70
Greenhouses.....	12	1,055,000	1,272 30
Halls.....	25	4,474,000	5,715 10
Hospitals.....	17	10,488,000	12,139 00
Hotels.....	154	76,874,000	93,371 25
Iron-works.....	31	8,261,000	10,696 00
Laundries.....	35	11,614,000	14,859 65
Markets.....	8	2,064,000	2,576 80
Mills and engines.....	97	17,774,000	23,218 85
Model houses.....	945	70,394,000	94,626 69
Navy Yard and barracks.....	8	15,214,000	14,073 93
Offices, stores and shops.....	1,198	145,990,000	189,326 21
Oil-works.....	8	880,000	1,161 25
Public institutions.....	11	13,900,000	16,649 70
Saloons and restaurants.....	308	24,295,000	31,302 56
Schools.....	46	8,055,000	10,263 50
Slaughtering-houses.....	6	2,529,000	3,130 70
Stables.....	337	16,692,000	22,922 35
Steam and street railways.....	73	160,145,000	158,770 00
Stone-works.....	9	1,213,000	1,580 80
Sugar-refineries.....	1	32,121,000	27,320 80
Tanneries.....	6	364,000	502 00
Theatres.....	18	3,252,000	4,227 24
Warehouses.....	9	1,827,000	2,346 00
Wharves and shipping.....	67	21,890,000	27,191 89
Total.....	4,524	852,709,000	\$1,009,039 09

**Table VI.***Number and Amounts of Abatements Allowed during the Year 1902.*

ON ACCOUNT OF ASSESSMENTS FOR YEAR.	Number.	Amount.
1900 .....	43	\$551 81
1901 .....	2,136	22,150 36
1902 .....	3,102	20,764 62
Total .....	5,281	\$43,466 79

The abatements allowed on account of 1902 assessments, amounting to \$20,764.62, were due to changes in occupancy of premises, changes in ownership, vacancies, errors in valuations and assessments, inaccuracy of meters as proved by tests, underground leaks for which the owner could not be held entirely responsible, and for other reasons, which, in the judgment of the General Superintendent, entitled the water-taker to consideration.

The abatements on account of 1900 and 1901, were due to bills uncollectible, changes of ownership, failures, shut-off for non-payment, cleaning up old accounts.

**Table VII.***New Elevator, Motor, Fire, and Service Pipes.*

Elevator pipes .....	13
Motor pipes .....	9
Fire pipes .....	48
Service pipes .....	1,256
Total .....	1,326

**Table VIII.***Turning Water Off and On.*

For repairs of mains .....	723
“ “ “ services .....	3,357
“ non-payment of water bills .....	2,157
“ waste .....	4
Turned on first time .....	1,220
Vacancies .....	3,761
Total .....	11,222

Table IX.

*Off and On Receipts.*

Received for turning water off and on for repairs, deposited with City Collector .....	\$1,667 50
----------------------------------------------------------------------------------------	------------

Table X.

ELEVATOR, MOTOR, AND FIRE PIPE SERVICE, FOR THE YEAR  
ENDING DECEMBER 31, 1902.*Elevators.*

Under supervision December 31, 1901 . . . . .	567	
Discontinued during the year . . . . .	7	
Changed to electric . . . . .	3	
	— 10	
		557
New elevators inspected and accepted during the year . . . . .		21
		—
Under supervision December 31, 1902 . . . . .		578
Changed to tank and metered water, and still under supervision . . . . .		44
Inspections made . . . . .		593
Accuracy tests made . . . . .		320
Registering inaccurately and repaired by owners . . . . .		59
Wasting water and repaired by owners . . . . .		53
Clock cord broken, or out of place, and repaired by owners . . . . .		41
Clock hands off, or glass broken, and repaired by owners, . . . . .		24

*Motors.*

Under supervision December 31, 1901 . . . . .	124	
Discontinued . . . . .	4	
Placed on meter . . . . .	2	
Changed to electric . . . . .	1	
	— 7	
		117
New motors added to service during the year . . . . .		12
		—
Under supervision December 31, 1902 . . . . .		129
Motors on meter . . . . .		13
Inspections made . . . . .		97
Measured . . . . .		21
Tested . . . . .		27
Registering inaccurately and repaired by owners . . . . .		13
Not registering and repaired by owners . . . . .		6
Wasting water and repaired by owners . . . . .		26

*Fire Service.*

Premises under supervision December 31, 1901 . . . . .	425
Supervision discontinued . . . . .	3
	<hr/> 422
Premises equipped during the year . . . . .	37
	<hr/> 459
Premises under supervision December 31, 1902 . . . . .	459
Inspection of premises . . . . .	3,165
Total number of inspections of outlet valves . . . . .	31,562
Total number of hydrant inspections . . . . .	704
Total number of valves sealed and resealed . . . . .	2,778
Total number of hydrants sealed and resealed . . . . .	120

*By-passes.*

Meter by-passes under supervision December 31, 1901, . . . . .	38
By-passes, additional . . . . .	2
	<hr/> 40
Under supervision December 31, 1902 . . . . .	40
	<hr/> 172
Inspections made . . . . .	172
Resealed . . . . .	16

## WASTE DETECTION.

Table XI.

*Water Inspection.*

	Number.
Waste reports . . . . .	7,876
Reexaminations . . . . .	8,217
First reexamination . . . . .	7,255
Second " . . . . .	1,578
Third " . . . . .	615
Fine notices issued . . . . .	37

Table XII.

*Defective Fixtures and Waste.*

	Number.
Tank fixtures leaking . . . . .	6,160
Faucets leaking . . . . .	3,282
Water-closets leaking . . . . .	223
Bursts . . . . .	268
Wilful waste . . . . .	67



## METER SERVICE.

Table XIII.

*Statement of Meters for Year ending January, 31, 1903.*

Meters belonging to department January 31, 1903 . . . . .	5,150
Purchased during year . . . . .	47
	<hr/>
	5,197
Condemned during year . . . . .	8
	<hr/>
Meters belonging to department January 31, 1903 . . . . .	<u><u>5,189</u></u>

Table XIV.

*Distribution of Meters January 31, 1903.*

In service . . . . .	: 4,627
At department shop . . . . .	562
	<hr/>
	<u><u>5,189</u></u>

Table XV.

*General Statement of work performed on Meters during year ending January 31, 1903.*

	Meters.	Boxes.
Applied . . . . .	334	74
Discontinued . . . . .	180	.....
Changed . . . . .	810	.....
Changed location . . . . .	17	.....
Tested . . . . .	1,834	.....
Repaired at shop . . . . .	811	.....
Repaired at factory . . . . .	80	.....
Repaired in service . . . . .	355	220
Abandoned . . . . .	.....	12
Examined . . . . .	344	.....
Hayed . . . . .	1,471	.....
Condemned . . . . .	9	.....
Purchased . . . . .	47	.....
Meters in service . . . . .	4,627	.....
Private meters applied . . . . .	3	.....
Private meters in service . . . . .	47	.....
Meters at department shop . . . . .	561	.....

Table XVI.  
*Meters Applied.*

	DIAMETER IN INCHES.							Totals.
	4	3	2	1½	1	¾	⅝	
Crown.....	3	6	9	5	19	30	76	148
Worthington.....		2	13	6	23	27	.....	71
Hersey.....	1	.....	11	11	13	5	.....	41
Metropolitan....				5	4	40	.....	49
B. W. W.....						4	.....	4
Disc.....		3	4	6	1	.....	.....	14
Nash.....		3	.....	.....	.....	1	.....	4
Empire.....					1	.....	.....	1
Lambert.....				1	.....	1	.....	2
Totals.....	4	14	37	34	61	108	76	334

Table XVII.  
*Meters Discontinued.*

	DIAMETER IN INCHES.							Totals.
	4	3	2	1½	1	¾	⅝	
Crown.....	1	3	8	5	5	15	47	84
Worthington.....	1	3	9	2	14	14	.....	43
Hersey.....		1	2	4	1	8	2	18
Metropolitan.....				2	3	28	.....	33
Disc.....					1	.....	.....	1
B. W. W.....						1	.....	1
Totals.....	2	7	19	13	24	66	49	180

**Table XVIII.**  
*Meters Purchased.*

	DIAMETER IN INCHES.					Totals.
	4	3	2	1½	1	
Hersey.....	1	.....	6	7	12	26
Disc.....	.....	3	5	9	.....	17
Crown.....	.....	.....	.....	1	.....	.1
Nash.....	.....	3	.....	.....	.....	3
Totals.....	1	6	11	17	12	47

**Table XIX.**  
*Meters Repaired at Factory.*

	DIAMETER IN INCHES.						Totals.
	3	2	1½	1	¾	5/8	
Worthington.....	.....	11	1	10	.....	.....	22
Crown.....	3	1	1	7	4	32	48
Hersey.....	.....	.....	2	.....	6	.....	8
Lambert.....	.....	.....	1	1	.....	.....	2
Totals.....	3	12	5	18	10	32	80

**Table XX.**  
*Meters Condemned.*

	DIAMETER IN INCHES.			Totals.
	3	1	¾	
Worthington.....	.....	5	1	6
B. W. W.....	.....	.....	1	1
Hersey.....	1	.....	.....	1
Totals.....	1	5	2	8

**Table XXI.***Meters Repaired in Service.*

CAUSE OF REPAIRS.	Number.	CAUSE OF REPAIRS.	Number.
Irregular registration.....	12	<i>Brought forward.....</i>	330
Dirt.....	1	Gear bound.....	3
Spindle bound.....	1	Ratchet worn.....	1
Hands “ .....	5	Did not mesh.....	5
Glass broken .....	51	Cover loose.....	1
Cover “ .....	28	Leak at stop-cock.....	1
Clock “ .....	44	Piston bound.....	2
Spindle “ .....	6	Ratchet broken.....	8
“ leak.....	98	Gear “ .....	1
Coupling “ .....	49	Fish in meter.....	2
Gear loose.....	16	Train bound.....	1
Defaced.....	19		
<i>Carried forward.....</i>	330	<i>Totals.....</i>	355

**Table XXII.***Meters Changed.*

CAUSE.	Number.	CAUSE.	Number.
For test.....	400	<i>Brought forward.....</i>	654
No force .....	20	Leak at body.....	14
Frozen.....	21	Piston worn.....	1
Gravel .....	10	Pinion bent.....	2
Stoppage.....	13	Spindle broken .....	5
Solder.....	17	Defaced .....	4
Hands bound.....	4	Rust.....	20
Glass broken.....	2	Hands loose .....	1
Intermediate broken.....	50	Shaft broken.....	7
Ratchet “ .....	10	Irregular registration.....	87
Enlargement.....	21	Relocate .....	5
Did not mesh .....	30	Train bound.....	4
Leak at spindle.....	1	Leak at coupling.....	1
Piston bound.....	13	Fish in meter.....	1
Gear “ .....	1	Valve broken.....	1
Heat.....	9	Cover “ .....	2
Clock gear broken.....	13	Disc “ .....	1
Clock broken.....	19		
<i>Carried forward .....</i>	654	<i>Totals.....</i>	810



**Table XXIII.***Meters in Service January 31, 1903.*

	DIAMETER IN INCHES.								Totals.
	6	4	3	2	1½	1	¾	⅝	
Crown.....	10	45	53	84	170	379	423	1,192	2,356
Worthington.....	2	17	31	135	126	506	344	.....	1,161
Hersey.....	2	6	12	31	51	91	177	14	384
Metropolitan.....	.....	.....	.....	1	20	96	495	3	615
B. W. W.....	.....	.....	.....	.....	.....	.....	39	.....	39
Lambert.....	.....	.....	.....	2	3	1	4	5	15
Thomson.....	.....	.....	.....	.....	.....	.....	1	2	3
Disc.....	.....	.....	6	5	13	2	.....	.....	26
Nash.....	.....	.....	3	.....	1	1	1	.....	6
Empire.....	.....	.....	.....	.....	7	5	1	.....	13
Gem.....	1	4	.....	.....	.....	.....	.....	.....	5
Trident.....	.....	.....	.....	.....	.....	2	.....	.....	2
Torrent.....	1	.....	.....	.....	.....	.....	.....	.....	1
Ball & Fitts.....	.....	.....	1	.....	.....	.....	.....	.....	1
Totals.....	16	72	106	258	391	1,083	1,485	1,216	4,627

**Table XXIV.***Private Meters Applied.*

	DIAMETER IN INCHES.			Totals.
	6	1	⅝	
Crown.....	1	1	1	3
Totals.....	1	1	1	3

Table XXV.

*Private Meters in Service.*

	DIAMETER IN INCHES.								Totals.
	6	4	3	2	1½	1	¾	⅝	
Worthington.....			2	5	.....	3	.....	2	12
Crown.....	2	2	2	5	9	3	2	5	30
Hersey.....			1	1	.....				2
Gem.....	2								2
B. W. W.....							1	.....	1
Totals.....	4	2	5	11	9	6	3	7	47

Table XXVI.

*Meters at Department Shop January 31, 1903.*

	DIAMETER IN INCHES.								Totals.
	6	4	3	2	1½	1	¾	⅝	
Crown.....			2	2	.....	1	50	133	188
Hersey.....		1	.....	2	2	2	8	6	21
Worthington.....		4	2	16	1	63	60	7	153
Metropolitan.....				3	.....	36	119	} .....	174
“ shells.....							16		
Lambert.....						1	.....	1	2
Thomson.....							1	4	5
Gem.....	1	1	4	2	.....				8
Empire.....							1	.....	1
Ball & Fitts.....				1	.....		1	.....	2
Nash.....						1	1	2	4
Rogers.....							1	.....	1
B. W. W.....							2	.....	2
Champion.....							1	.....	1
Totals.....	1	6	8	26	3	104	261	153	562

AT METER SERVICE SHOP, 710 ALBANY STREET.

*Meters Belonging to Department January 31, 1903.*

Worthington, 6-inch	.	2	Empire, 1½-inch	.	7	
" 4 "	.	21	" 1 " "	.	5	
" 3 "	.	33	" ¾ " "	.	2	
" 2 "	.	151				14
" 1½ "	.	127	B. W. W., ¾ " "	.	.	41
" 1 " "	.	569	Gem, 6 " "	.	2	
" ¾ " "	.	404	" 4 " "	.	5	
" ⅝ " "	.	7	" 3 " "	.	4	
		—1,314	" 2 " "	.	2	
Crown, 6 " "	.	10				13
" 4 " "	.	45	Nash, 3 " "	.	3	
" 3 " "	.	55	" 1½ " "	.	1	
" 2 " "	.	86	" 1 " "	.	2	
" 1½ " "	.	170	" ¾ " "	.	2	
" 1 " "	.	380	" ⅝ " "	.	2	
" ¾ " "	.	473				10
" ⅝ " "	.	1,325	Disc, 3 " "	.	6	
		—2,544	" 2 " "	.	5	
Metropolitan, 2 " "	.	4	" 1½ " "	.	13	
" 1½ " "	.	20	" 1 " "	.	2	
" 1 " "	.	132				26
" ¾ " "	.	630	Thomson, ¾ " "	.	2	
" ⅝ " "	.	3	" ⅝ " "	.	6	
		—789				8
Hersey, 6 " "	.	2	Trident, 1 " "	.	.	2
" 4 " "	.	7	Ball & Fitts, 3 " "	.	1	
" 3 " "	.	12	" 2 " "	.	1	
" 2 " "	.	33	" ¾ " "	.	1	
" 1½ " "	.	53				3
" 1 " "	.	93	Torrent, 6 " "	.	.	1
" ¾ " "	.	185	Champion, ¾ " "	.	.	1
" ⅝ " "	.	20	Rogers, ¾ " "	.	.	1
		—405				5,189
Lambert, 2 " "	.	2				
" 1½ " "	.	3				
" 1 " "	.	2				
" ¾ " "	.	4				
" ⅝ " "	.	6				
		—17				

## REPORT OF THE DISTRIBUTION DIVISION.

OFFICE OF THE SUPERINTENDENT,  
710 ALBANY STREET, February 1, 1903.

EUGENE S. SULLIVAN, ESQ.,  
*Water Commissioner :*

SIR,—I herewith submit in tabular form the annual report of the Distribution Division for the year ending January 31, 1903.

Respectfully yours,  
WILLIAM J. WELCH,  
*Superintendent.*

**Statement of Location, Size, and Number of Feet of Main Pipe  
Extended during the Year ending January 31, 1903.**

NOTE.—C. P. indicates City Proper; Rox., Roxbury; W. R., West Roxbury; Bri., Brighton; Dor., Dorchester; So. B., South Boston; E. B., East Boston; Chsn., Charlestown.

LOCATION.		District.	High or Low Service.	Size.	Length.
Washington st....	Between Wells ave. and Burt st.....	Dor.	H.	30-in.	1,515
Blue Hill ave. (west side).....	“ Collins st. and N.Y., N.H. & H. R.R. ....	“	H.	16-in.	36
Blue Hill ave. ....	Opposite Collins st. (Connection between 16 and 6) .....	“	H.	“	101
Haven ave. ....	At Blue Hill ave. ....	“	H.	“	10
Massachusetts ave.	Between Clapp st. and N.Y., N.H. & H. R.R. ....	“	L.	“	603
“	Between Magazine and Shirley sts...	Rox.	L.	“	668
Columbia road....	“ Douglas and Vale sts. ....	So. B.	L.	“	1,428
Dorchester ave....	At Fourth st. ....	“	L.	“	13
	Total of 16-inch .....				2,859
Broad st. ....	Between Wharf st. and India sq. ....	C. P.	H.	12-in.	168
Congress sq. ....	“ Congress and Devonshire sts. ....	“	L.	“	142
	Carried forward .....				310



Statement of Main Pipe Extended. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....				310
India st.....	At State st.....	C. P.	H.	12-in.	31
Kilby st.....	" .....	"	L.	"	11
Purchase st.....	Between Oliver and High sts....	"	H.	"	217
State st. (so. side Old State House.	" Washington and Devon- shire sts.....	"	L.	"	156
Tremont st. ....	Between Eliot st. and Van Renssel- aer place.....	"	H.	"	80
Brookline ave....	Between Bellevue st. and Longwood ave.....	Rox.	L.	"	1,114
Bucknam st. ....	Between Wensley st. and Fisher ave.	"	H.	"	181
Magazine st. ....	From Massachusetts av.....	"	L.	"	312
Ritchie st.....	Between Columbus ave. and Mar- cella st.....	"	H.	"	365
Shirley st.....	At Massachusetts ave.....	"	L.	"	50
Wensley st. ....	" Bucknam st.....	"	H.	"	29
Angell st. ....	" Canterbury st.....	W. R.	H.	"	17
Belgrade ave....	Between Montello and Malcolm sts...	"	H.	"	256
Call st. ....	" Keyes and Hall sts.....	"	H.	"	364
Canterbury st. ....	" Calder and Angell sts.....	"	H.	"	228
Mt. Vernon st. ....	" Garfield and Vermont aves.	"	H.	"	278
South Huntington ave. ....	" Centre and Perkins sts.....	"	H.	"	714
Litchfield st. ....	" Cygnet and Elba sts.....	Bri.	L.	"	174
Capen st.....	" Ashland and Freeport sts..	Dor.	L.	"	335
" .....	" Blanche and Greenhill sts..	"	L.	"	228
Columbia road...	" Moseley and Buttonwood sts.....	"	L.	"	685
Donkin terrace...	At Savin Hill ave. ....	"	L.	"	207
Haven ave.....	From Oakland st. ....	"	H.	"	236
Manchester st. ....	Between Freeland and Groveland sts.....	"	H.	"	214
Moseley st.....	At Columbia road .....	"	L.	"	299
" .....	" " " .....	"	L.	"	28
Mt. Vernon st. ....	Between Von Hillern and Shoreham sts.....	"	L.	"	266
Washington st. ...	At Rockwell st.....	"	H.	"	13
G st.....	Between Eighth and Columbia road,	So. B.	L.	"	173
Old Harbor st. ....	" " " " " .....	"	L.	"	9
	<i>Carried forward</i> .....				7,580

## Statement of Main Pipe Extended. — Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....				7,580
Byron st.....	Between Homer and Coleridge sts. .	E. B.	L.	12-in.	312
Meridian st.....	“ Condor st. and drawbridge,	“	L.	“	45
Saratoga st.....	At Bennington st.....	“	L.	“	111
Swift st.....	“ South side Bennington st. ....	“	L.	“	17
West st.....	Across Bennington st.....	“	L.	“	98
Long Island.....	From Pipe to Rainsford Island, to a point opposite superintendent's residence .....	B. H.	H.	“	3,917
	Total of 12-inch.....				<u>12,080</u>
Bulfinch st. ....	At Bowdoin st. ....	C. P.	H.	10-in.	6
Carleton st. ....	Between Greenwich and Claremont parks .....	“	L.	“	114
East st.....	“ Atlantic ave. and South st.,	“	L.	“	18
Harrison ave.....	“ Essex st. and Norfolk pl....	“	H.	“	253
Kilby st. ....	At State st. ....	“	H.	“	50
Normandy st.....	Between Castlegate and Washington sts.....	Rox.	H.	“	61
Short st.....	At Brookline ave. ....	“	L.	“	22
Garden st. ....	Between Maple and Corey sts.....	W. R.	H.	“	243
Willow st.....	“ Railroad and Centre sts. .	“	H.	“	84
Denton st.....	From Cambridge st. ....	Bri.	L.	“	311
Capen st.....	Between Fuller st. and Fairmount ave.....	Dor.	H.	“	266
“ .....	At Fuller st. ....	“	H.	“	53
“ .....	Between Selden and Fuller sts. ....	“	H.	“	277
Tonawanda st....	“ Greenbrier st. and Ridge road .....	“	H.	“	156
Midway st.....	“ Richards and Binford sts..	So. B.	L.	“	239
“ .....	“ “ “ “ “ ..	“	L.	“	818
Richards st.....	“ Midway and A sts.....	“	L.	“	157
Walley st.....	From Orient ave.....	E. B.	H.	“	112
	Total of 10-inch.....				<u>3,240</u>
Congress st.....	Between Post Office ave. and Exchange place.....	C. P.	H.	8-in.	32
Congress sq.....	Between Congress and Devonshire sts.....	“	L.	“	10
Fiske Wharf.....	Off Commercial st.....	“	L.	“	289
	<i>Carried forward</i> .....				<u>331</u>

Statement of Main Pipe Extended. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....				331
Harrison ave.....	Between Dover st. and Lovering pl..	C. P.	H.	8-in.	894
Lovering pl.....	“ Harrison ave. and Washington st.....	“	H.	“	346
Randall st.....	At Harrison ave.....	“	L.	“	60
St. Botolph st.....	Between Irvington st. and B. & A. R.R.....	“	L.	“	172
Water st.....	Between Washington and Devonshire sts.....	“	H.	“	204
Binney st.....	At Longwood ave.....	Rox.	L.	“	22
Brookledge st.....	From Humboldt ave.....	“	H.	“	148
Farnham st.....	Between Gerard and Magazine sts..	“	L.	“	148
Harold st.....	“ Waumbeck and Crawford sts .....	“	H.	“	139
Park st.....	At Brookline ave.....	“	L.	“	40
Proctor st.....	Between Norfolk and Massachusetts aves.....	“	L.	“	454
Berry st.....	Between Newburg and Brook sts....	W. R.	H.	“	80
Bradford terrace..	Off South st.....	“	H.	“	412
Cornwall st.....	Between Boylston st. and Brookside ave.....	“	H.	“	168
Dixwell st.....	From Columbus ave.....	“	H.	“	335
Malcolm st.....	“ Belgrade ave.....	“	H.	“	105
Metcalf st.....	Off Penfield st.....	“	H.	“	73
Orange st.....	Between Brook and Cornell sts.....	“	H.	“	158
Unnamed st. off So. Huntington ave.....	First left from Centre st.....	“	H.	“	49'
Brooksdale road..	Between Raneleigh road and Allston terrace.....	Bri.	H.	“	187
Dumas st.....	At Litchfield st.....	“	L.	“	8
Faneuil st.....	“ Oak square.....	“	H.	“	60
Leamington road.	Between Commonwealth ave. and Wallingford road.....	“	H.	“	864
Snow st.....	Between Washington and Union sts.	“	H.	“	118
Almont st.....	At Blue Hill ave.....	Dor.	H.	“	12
Blanch st.....	Between Preston and Greenhill sts..	“	L.	“	192
Blue Hill ave.....	Opposite Dyer ave.....	“	H.	“	46
Blue Hill ave.....	Opposite Almont st., connection between 16-inch and 6-inch main....	“	H.	“	12
Centre st.....	At Leslie st.....	“	H.	“	30
	<i>Carried forward</i> .....				5,867

## Statement of Main Pipe Extended. — Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....	.....	.....	.....	5,867
Chester st.....	From Oakland st....	Dor.	H.	8-in.	19
Collins st.....	At Blue Hill ave.....	"	H.	"	10
Corona st.....	Between Geneva ave. and Bowdoin st.....	"	H.	"	429
Downer court....	Off Bowdoin st.....	"	H.	"	216
Dyer ave.....	At Blue Hill ave., connection between 16-inch and 6-inch main.....	"	H.	"	18
Faxon st.....	Between Elmont and Kilton sts.....	"	H.	"	136
Fuller st.....	" Morton and Capen st.....	"	H.	"	489
Leslie st.....	" Dix and Centre sts.....	"	H.	"	391
Lindsey st.....	" Greenbrier and Waldeck sts.....	"	H.	"	142
"	Between Greenbrier and Waldeck sts.....	"	L.	"	95
Millet st.....	At Faxon st.....	"	H.	"	5
Moultrie st.....	Between Washington and Seaborn sts.....	"	H.	"	66
Sudan st.....	Between Dorchester ave. and Sagamore st.....	"	L.	"	756
Winthrop st.....	Between Dennis st. and Brook ave..	"	L.	"	208
Woolsen st.....	Between Blue Hill ave. and Wildwood st.....	"	H.	"	456
Atlantic st.....	At Columbia road.....	S. B.	L.	"	25
Ninth st.....	Between Dunham st. and Columbia road.....	"	L.	"	104
Austin st.....	At Lynde st.....	Chsn.	L.	"	62
Roland st.....	Between Stark and Crescent sts.....	"	L.	"	215
"	" Crafts st. and B. & M. R.R.,	"	L.	"	167
Bennington st. (north side)....	" Saratoga and Wordsworth sts.....	E. B.	L.	"	1,797
Bennington st. (north side)....	Between Neptune road and West st..	"	L.	"	3,717
Bennington st. (north side)....	Opp. Ashley st. (connection between 12-inch and 6-inch main).....	"	L.	"	51
Farrington st....	West from Overlook sts.....	"	H.	"	471
Trumbull st.....	Across Bennington st.....	"	L.	"	50
	Total of 8-inch.....				15,962
Harrison ave.....	Between Essex st. and Norfolk place,	C. P.	H.	6-in.	127
Truro st.....	" Harwich and Yarmouth sts.,	"	L.	"	114
	<i>Carried forward</i> .....	.....	.....	.....	241



Statement of Main Pipe Extended. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....				241
Austin st.....	At Brookline ave.....	Rox.	L.	6-in.	33
Castlegate st.....	Between Blue Hill ave. and Nor- mandy st .....	"	H.	"	450
Davenport st.....	At Tremont st.....	"	L.	"	86
Fenner st.....	Off Rochdale st.....	"	H.	"	75
Gay st.....	Between Linden Park st. and Rox- bury st.....	"	L.	"	55
Longwood place..	At Brookline ave.....	"	L.	"	30
Marvin st.....	" Shawmut ave.....	"	L.	"	46
Parker Hill ter- race.....	Off Parker Hill ave.....	"	H.	"	176
Renfrew st.....	At Harrison ave.....	"	L.	"	53
Whiting st.....	" Moreland st.....	"	H.	"	63
Barbara st.....	" South Huntington ave.....	W. R.	H.	"	33
Boynton st.....	" Call st.....	"	H.	"	68
Calder st.....	Between Blue Hill ave. and Canter- bury st.....	"	H.	"	212
Hall st.....	At Call st.....	"	H.	"	118
Palfrey st.....	Off Brown ave.....	"	H.	"	131
Perham st.....	Between Ivory st. and N. Y., N. H. & H. R.R.....	"	H.	"	47
Pleasant st.....	From Mt. Vernon st.....	"	H.	"	234
Seaverns ave.....	Between Alfred and Alveston sts....	"	H.	"	207
Starr lane.....	From Seaverns ave.....	"	H.	"	182
Elks st.....	Between Cambridge and Sparhawk sts.....	Bri.	H.	"	164
Bird st.....	Between Hancock st. and Columbia road.....	Dor.	H.	"	316
Blue Hill ave.....	Between Collins and Mattapan sts...	"	H.	"	1,006
Blue Hill ave. (west side).....	" Collins st. and N. Y., N. H. & H. R.R.....	"	H.	"	120
Blue Hill ave.....	At Norfolk st.....	"	H.	"	78
Carmen st.....	Between Faxon and Kilton sts.....	"	H.	"	46
Ellsworth st.....	From Dorchester ave.....	"	L.	"	136
Harvard st.....	Between Walk Hill st. and New Cal- vary Cemetery.....	"	H.	"	1,212
Herbert st.....	At West Tremlett st.....	"	H.	"	81
Milton ave.....	Bet. Lauriat ave. and Norfolk st.	"	H.	"	124
	<i>Carried forward</i> .....				5,823

**Statement of Main Pipe Extended. — Concluded.**

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....				5,823
Norfolk terrace...	At Washington st.....	Dor.	H.	6-in.	74
Ruggles place.....	Off Washington st.....	"	H.	"	350
Sagamore st.....	At Sudan st.....	"	L.	"	78
Sheridan st.....	Off Minot st.....	"	L.	"	90
Trent st.....	Between Clarkson and Coleman sts.	"	H.	"	254
Vicksburg st.....	At First st.....	So. B.	L.	"	83
Crescent st.....	" Roland st.....	Chsn.	L.	"	27
Antrim st.....	" Bennington st.....	E. B.	L.	"	41
Bennington st. (south side).....	Between Saratoga and Leyden sts...	"	L.	"	1,240
Bennington st. (south side).....	" Wordsworth and Trumbull sts.....	"	L.	"	527
Bennington st.....	Opposite Ashley st., connection be- tween 12-inch and 6-inch mains.	"	L.	"	3
Breed st.....	At Bennington st.....	"	L.	"	39
Harmony st.....	" " ".....	"	L.	"	16
Horace st.....	" Byron st.....	"	L.	"	106
Orleans st.....	" Bennington st.....	"	L.	"	32
Bellevue ave.....	Between Huckins ave. and Bay st.	Quincy	H.	"	468
Long Island .....	Opp. Superintendent's Residence, connection between 12-inch and 6-inch .....	B. H.	H.	"	15
	Total of 6-inch.....				9,266
Meridian st.....	On bridge .....	E. B.	L.	2-in.	620
	Total of 2-inch.....				620

**Statement of Location, Size, and Number of Feet of Main Pipe  
Relaid during the Year ending January 31, 1903, and Former  
Size of the Same.**

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
Brookline ave. ....	Between Bellevue and Short sts.	Rox.	L.	40-in.	240	40-in.
" .....	Between Boylston and Burling- ton sts.....	"	L.	"	1,127	"
	Total of 40-inch.....				1,367	

Statement of Main Pipe Relaid. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
Cambridge st.....	At Staniford st.....	C. P.	L.	30-in.	20	30-in.
Southampton st...	At Second Water Way from Andrews sq.....	So. B.	L.	"	94	24 and 30-in.
" ...	From Andrews sq.....	"	L.	"	820	30-in.
Under Chelsea bridge.....	Between Piers 19 and 20, B. & M. Driveway.....	Chsn.	L.	"	14	"
	Total of 30-inch.....				948	
Under Chelsea bridge.....	Between Piers 19 and 20, B. & M. Driveway.....	Chsn.	L.	24-in.	19	24-in.
Southampton st...	From Andrews sq.....	So. B.	L.	20-in.	72	30-in.
Bedford st.....	Between Summer and Washington sts.....	C. P.	L.	16-in.	1,108	12-in.
Staniford st.....	At Cambridge st.....	"	L.	"	18	6-in.
State st.....	Between Chatham row and Commercial st.....	"	L.	"	120	16-in.
" .....	Between Devonshire st. and Merchants' row.....	"	L.	"	517	"
Harrison ave.....	Between Northampton and Zeigler sts.....	Rox. and C. P.	L.	"	2,679	6 and 12-in.
Blue Hill ave. (east side).....	Between Collins st. and N. Y., N. H. & H. R.R.....	Dor.	H.	"	57	12-in.
Blue Hill ave. (east side).....	Between Freemont st. and N. Y., N. H. & H. R.R.....	"	H.	"	381	"
Massachusettsave.	Between Clapp st. and N. Y., N. H. & H. R.R.....	"	L.	"	5	"
Columbia road ...	Between Douglas and Vale sts...	So. B.	L.	"	158	8-in.
Dorchester ave....	" Second and A sts.....	"	L.	"	1,105	6-in.
Vale st.....	" Columbia road and Mercer st.....	"	L.	"	121	"
	Total of 16-inch.....				6,269	
Berkeley st.....	At Newbury st. ....	C. P.	L.	12-in.	63	8-in.
Cambridge st.....	" Bowdoin sq.....	"	H.	"	87	6-in.
Causeway st.....	Between Lowell and Leverett sts.....	"	L.	"	292	12-in.
Chardon st. ....	At Bowdoin sq.....	"	L.	"	50	6-in.
Chauncy st.....	" Bedford st. ....	"	L.	"	41	8-in.
Corning st.....	Between Wheeler st. and Shawmut ave.....	"	L.	"	85	6-in.
	<i>Carried forward.</i> .....				618	

Statement of Main Pipe Relaid. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward</i> .....				618	
Davis st.....	At Harrison ave.....	C. P.	L.	12-in.	38	4-in.
East Brookline st.	Between Albany and Washing- ton sts.....	"	L.	"	1,336	6-in.
" Lenox st....	Across Harrison ave.....	"	L.	"	65	"
Eliot st.....	At Pleasant st.....	"	L.	"	30	8-in.
Friend st.....	" Traverse st.....	"	L.	"	64	6-in.
" .....	Between Causeway and Merri- mac sts.....	"	L.	"	934	"
Green st.....	At Bowdoin sq.....	"	L.	"	9	10-in.
Harrison ave.....	Between Malden and Union Park sts.....	"	L.	"	252	12-in.
Howard st.....	At Court st.....	"	H.	"	47	6-in.
India st.....	" State " .....	"	L.	"	39	12-in.
Kilby st.....	" " " .....	"	L.	"	38	8-in.
Lincoln st.....	Between Bedford and Essex sts.	"	L.	"	374	6-in.
Merchants' row...	At State st.....	"	L.	"	10	8-in.
Merrimac st. ....	Between Haymarket sq. and Portland st.....	"	L.	"	557	6-in.
Newbury st.....	" Clarendon and Berke- ley sts.....	"	L.	"	700	"
Pitts st.....	At Merrimac st.....	"	L.	"	36	"
State st.....	Between Chatham row and Commercial st.....	"	H.	"	97	12-in.
" .....	" Merchants' row and Devonshire st.....	"	H.	"	380	8-in.
Sudbury st.....	At Merrimac st.....	"	L.	"	42	6-in.
West Canton st....	Between Tremont and Warren ave.....	"	L.	"	560	"
Winchester st....	At Pleasant st.....	"	L.	"	17	"
Brookline ave.....	Between Bellevue st. and Long- wood ave.....	Rox.	L.	"	5	12-in.
Bucknam st.....	" Wensley st. and Fisher ave.....	"	H.	"	12	"
Eustis st.....	Across Harrison ave.....	"	L.	"	80	6-in.
Hammond st.....	Between Shawmut ave. and Tremont st.....	"	L.	"	1,152	"
Holborn st.....	" Gannett and Warren sts.....	"	H.	"	273	"
Linden Park st....	" Roxbury and Tre- mont sts.....	"	L.	"	1,635	"
	<i>Carried forward</i> .....				9,400	



Statement of Main Pipe Relaid. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward.....</i>				9,400	
Shawmut ave.....	Between Vernon and Roxbury sts.....	Rox.	L.	12-in.	447	6-in.
Westminster st....	At Hammond st.....	"	L.	"	26	"
Canterbury st....	Between Calder and Angell sts..	W. R.	H.	"	5	12-in.
Green st.....	At Brookside ave.....	"	H.	"	4	"
" .....	" " " .....	"	H.	"	121	8-in & 12-in
" .....	" " " .....	"	H.	"	103	12-in.
Mt. Vernon st....	Between Garfield and Vermont aves.....	"	H.	"	5	8-in.
South Huntington ave.....	At Perkins st.....	"	H.	"	24	12-in.
Walter st.....	Between Weld and Mendum sts.	"	H.	"	326	8-in.
Williams st.....	Over Stony brook .....	"	H.	"	113	12-in.
Litchfield st.....	Between Cygnet and Elba sts...	Bri.	L.	"	5	"
Blue Hill ave.....	At Norfolk st.....	Dor.	H.	"	4	"
Capen st.....	Between Blanche and Ashland sts.....	"	L.	"	198	6-in.
Carson st.....	At N.Y., N.H. & H. R.R.....	"	L.	"	24	"
Haven ave .....	At Oakland st.....	"	H.	"	15	12-in.
Haven ave.....	From Oakland st.....	"	H.	"	29	"
Moseley st.....	At Columbia road.....	"	L.	"	4	"
Mt. Vernon st....	Between Buttonwood and Von Hillern sts.....	"	L.	"	173	8-in.
Oakland st.....	Between Rockville and Favre sts.....	"	H.	"	1,420	12-in.
Rockville st.....	From Oakland st.....	"	H.	"	22	"
Rosewood st.....	" " " .....	"	H.	"	211	"
B st.....	Across Broadway.....	So. B.	L.	"	82	6 and 8-in.
G st.....	Between Eighth st. and Columbia road.....	"	L.	"	100	6-in.
Mercer st.....	Between Vale and Newman sts..	"	L.	"	188	"
Old Harbor st....	" Eighth st. and Columbia road.....	"	L.	"	287	"
Austin st.....	Between Lynde and Washington sts.....	Chsn.	L.	"	123	8-in.
Bennington st....	Between Chelsea st. and Neptune road.....	E. B.	L.	"	805	6-in.
Bennington st. (north side).....	Between Ashley and Walley sts.	"	L.	"	929	12-in.
	<i>Carried forward.....</i>				15,198	

Statement of Main Pipe Relaid. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward</i> .....				15,198	
Brooks st.....	Between Bremen and Chelsea sts.....	E. B.	L.	12-in.	181	6-in.
Byron st.....	Between Bennington and Horace sts.....	"	L.	"	204	"
Walley st.....	At Bennington st.....	"	L.	"	83	12-in.
	Total of 12-inch.....				15,666	
Bulfinch pl.....	At Bowdoin st.....	C. P.	H.	10-in.	26	6-in.
Bulfinch st.....	" Court st.....	"	H.	"	53	"
Carleton st.....	Between Greenwich and Claremont parks.....	"	L.	"	8	"
" .....	Between West Newton st. and Berwick park.....	"	L.	"	303	2, 4, and 6-in.
Carver st.....	At Pleasant st.....	"	L.	"	42	6-in.
Columbia st.....	" Bedford st.....	"	L.	"	28	"
Dover st.....	Between Harrison ave. and Albany st.....	"	L.	"	537	"
East st.....	At South st.....	"	L.	"	21	6 and 8-in.
" .....	Between Atlantic ave. and South st.....	"	L.	"	40	6-in.
Emerald st.....	At Dover st.....	"	L.	"	41	"
Harrison ave.....	" Bedford st.....	"	L.	"	25	"
" .....	Between Bedford and Essex sts.	"	L.	"	161	"
" .....	" Essex st. and Hayward pl .....	"	H.	"	27	"
Hartford st.....	At Purchase st.....	"	L.	"	29	"
Kingston st.....	" Bedford st.....	"	L.	"	54	"
Nashua st.....	Between Causeway and Minot sts.....	"	L.	"	714	"
Plympton st.....	Between Albany st. and Harrison ave.....	"	L.	"	424	"
Purchase st.....	Between High and Pearl sts.....	"	L.	"	976	"
Rochester st.....	At Harrison ave.....	"	L.	"	16	"
St. Botolph st.....	Between West Newton and Irvington sts.....	"	L.	"	575	"
St. James ave.....	At Berkeley st.....	"	L.	"	51	"
Village st.....	" Dover st.....	"	L.	"	43	"
Wareham st.....	Between Albany st. and Harrison ave.....	"	L.	"	466	"
	<i>Carried forward</i> .....				4,660	

Statement of Main Pipe Relaid. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward.....</i>				4,660	
Wellington st....	Columbus ave. and Carleton st...	C. P.	L.	10-in.	485	6-in.
Bellevue st.....	At Brookline ave.....	Rox.	L.	"	40	"
Cabot st.....	" Linden Park st.....	"	L.	"	29	"
Chestnut ave.....	" Centre st.....	"	H.	"	17	"
Fisher ave.....	" Bucknam st.....	"	H.	"	32	"
Palmer st .....	Across Harrison ave.....	"	L.	"	68	"
Rockland st.....	Between Walnut ave. and War- ren st.....	"	H.	"	866	"
Short st.....	At Brookline ave.....	"	L.	"	5	"
Warwick st. ....	" Hammond st.....	"	L.	"	28	"
Zeigler st.....	Across Harrison ave.....	"	L.	"	63	"
Garden st.....	Between Maple and Corey sts....	W. R.	H.	"	299	"
Capen st.....	At Fuller st.....	Dor.	H.	"	8	10-in.
Bowen st.....	" Dorchester st.....	So. B.	L.	"	42	4-in.
" .....	Between E and F sts.....	"	L.	"	190	2-in & 4-in.
Broadway .....	" A and B sts.....	"	L.	"	648	6-in.
E st.....	At Ninth st.....	"	L.	"	30	"
Third (East) st...	" Dorchester st.....	"	L.	"	31	"
Third (West) st...	" " .....	"	L.	"	22	"
Third st.....	Between A and B sts.....	"	L.	"	582	"
Common st.....	" Park and Adams sts....	Chsn.	L.	"	326	"
Henley st.....	" Park and Warren sts...	"	L.	"	83	"
Park st.....	Between Henley and Common sts .....	"	L.	"	309	"
Bremen st.....	At south line of Bennington st,	E. B.	L.	"	52	"
" .....	" north line of Bennington st,	"	L.	"	173	"
Main st.....	Over B., R. B. & L. R.R.....	Win'p.	H.	"	135	"
	Total of 10-inch.....				9,223	
Albion st.....	At Dover st .....	C. P.	L.	8-in.	45	6-in.
Asylum st.....	" Harrison ave.....	"	L.	"	35	"
Brattle sq.....	" Elm st.....	"	H.	"	15	4-in.
Claremont park...	Between Columbus ave. and Carleton st.....	"	L.	"	505	6-in.
Dartmouth place..	Off Dartmouth st .....	"	L.	"	506	4-in.
	<i>Carried forward.....</i>				1,106	

## Statement of Main Pipe Relaid—Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward.....</i>				1,106	
Decatur st.....	At Harrison ave.....	C. P.	L.	8-in.	37	4-in.
Elm st.....	Between Hanover and Washing- ton sts.....	"	H.	"	201	6-in.
Exchange st.....	At State st.....	"	L.	"	28	"
Exeter place.....	" Harrison ave.....	"	H.	"	16	"
Fairweather st....	" ".....	"	L.	"	17	"
Fayette st.....	" Pleasant st.....	"	L.	"	22	"
Florence st.....	" Harrison ave.....	"	L.	"	39	4-in.
Friend st.....	" Hanover st.....	"	L.	"	39	6-in.
Gloucester place..	Off Harrison ave.....	"	L.	"	222	4-in.
Greenwich pk.....	Between Columbus ave. and Carleton st.....	"	L.	"	515	4 and 6-in.
Irvington st.....	At St. Botolph st.....	"	L.	"	3	"
James st.....	" East Brookline st.....	"	L.	"	29	"
Lancaster st.....	" Merrimac st.....	"	L.	"	19	"
Lovering pl.....	" Harrison ave.....	"	L.	"	43	"
Market st.....	Across Friend and Merrimac sts.	"	L.	"	70	"
Melrose st.....	At Pleasant st.....	"	L.	"	21	"
Middlesex st.....	" Dover st.....	"	L.	"	38	"
Newcomb st.....	" Harrison ave.....	"	L.	"	16	"
Oneida st.....	" " ".....	"	L.	"	18	"
Pembroke st.....	Between Tremont st. and Warren ave.....	"	L.	"	749	"
Piedmont st.....	At Pleasant st.....	"	L.	"	15	"
Prospect st.....	Between Merrimac and South Margin sts.....	"	L.	"	168	2, 6, & 8-in.
Seneca st.....	At Harrison ave.....	"	L.	"	19	6-in.
Shawmut st.....	" Pleasant st.....	"	L.	"	20	"
State st.....	Between Merchants row and Devonshire st.....	"	H.	"	209	8-in.
Tennyson st.....	At Pleasant st.....	"	L.	"	17	6-in.
Troy st.....	" Harrison ave.....	"	L.	"	14	"
Brookledge st.....	From Humboldt ave.....	Rox.	H.	"	4	"
Hampshire st.....	At Linden park st.....	"	L.	"	37	"
Lamont st.....	" " " ".....	"	L.	"	35	"
Mozart st.....	" Centre st.....	"	H.	"	8	8-in.
	<i>Carried forward.....</i>				3,794	



Statement of Main Pipe Relaid. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward</i> .....				3,794	
Sherman st.....	At Rockland st.....	Rox.	H.	8-in.	24	6-in.
Simmons st.....	" Linden Park st.....	"	L.	"	35	"
Taber st.....	Across Harrison ave.....	"	L.	"	70	4-in.
Vila street.....	At Longwood ave.....	"	L.	"	18	6-in.
Winthrop.....	Between Dennis st. and Brooks ave.....	"	L.	"	162	"
Brookside ave.....	Between Green and Ophir sts...	W. R.	H.	"	228	8-in.
"	At Green st.....	"	H.	"	29	4 and 8-in.
Green st. ....	" Brookside ave.....	"	H.	"	60	12-in.
Leamington road..	Between Commonwealth ave. and Wallingford road.....	Bri.	H.	"	15	6-in.
Snow st.....	Between Washington and Union sts.....	"	H.	"	4	"
Almont st.....	At Blue Hill ave.....	Dor.	H.	"	25	8-in.
Ashland st.....	" Capen st.....	"	L.	"	3	6-in.
Blanche st.....	Between Preston and Greenhill sts.....	"	L.	"	60	"
Corona st.....	Between Geneva ave. and Bowdoin st.....	"	H.	"	5	"
Fuller st.....	Between Morton and Capen sts..	"	H.	"	6	8-in.
Faxon st.....	Between Elmont and Kilton sts.	"	H.	"	5	"
Greenhill st.....	At Capen st.....	"	L.	"	3	6-in.
Hollingsworth st..	From Oakland st.....	"	H.	"	325	8-in.
Lindsey st.....	Between Greenbrier and Waldeck sts.....	"	H.	"	4	"
Millet st.....	Between Wheatland and Talbot aves. ....	"	H.	"	160	6-in.
Moultrie st.....	" Washington and Seaborn sts.....	"	H.	"	4	"
"	From Washington st.....	"	H.	"	312	"
Broadway .....	Between H and D sts.....	So. B.	L.	"	1,091	"
"	At Dorchester ave. ....	"	L.	"	35	"
Fifth st.....	" Dorchester st.....	"	L.	"	43	"
First st.....	" " .....	"	L.	"	17	"
Fourth st.....	" " .....	"	L.	"	44	"
"	" Dorchester ave. ....	"	L.	"	44	"
"	" D st.....	"	L.	"	87	"
"	Across A st.....	"	L.	"	75	"
	<i>Carried forward</i> .....				6,787	



## Statement of Main Pipe Relaid. — Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
	<i>Brought forward.....</i>				6,787	
Sixth st.....	At Dorchester st. ....	So. B.	L.	8-in.	48	8-in.
Common st.....	Between Park and Adams sts. ..	Chsn.	L.	"	41	"
Roland st.....	" Stark and Crescent sts ,	"	L.	"	7	8-in.
Bremen st.....	At Brooks st. ....	E. B.	L.	"	4	6-in.
Leyden st.....	" Bennington st....	"	L.	"	37	8-in.
Long Island.....	Connection with pipe to Rainsford Island.....	B. H.	H.	"	85	4-in.
	Total of 8-inch .....				7,009	
Cambridge st.....	At Staniford st.....	C. P.	H.	6-in.	25	6-in.
Chickering place..	Between Washington st. and Harrison ave. extension. ....	"	H.	"	260	4-in.
Fay st.....	At Dover st .....	"	L.	"	12	"
Waverly place ....	Off South st.....	"	L.	"	127	"
Woodbury st.....	Between Washington st. and Shawmut ave.....	"	L.	"	345	"
Bellevue st.....	At Brookline ave.....	Rox.	L.	"	6	6-in.
Barbara st. ....	" South Huntington ave.....	W. R.	H.	"	4	"
Calder st.....	Between Blue Hill ave. and Canterbury st.....	"	H.	"	4	"
Donnybrook road,	At Faneuil st.....	Bri.	H.	"	88	"
"	" " .....	"	H.	"	40	"
Elko st.....	Between Cambridge and Sparhawk sts.....	"	H.	"	3	"
Blue Hill ave. (west side).....	Between Collins st. and N.Y., N. H. & H. R.R.....	Dor.	H.	"	4	"
Fox ave.....	At Adams st.....	"	H.	"	6	4-in.
Herbert st.....	" West Tremlett st.....	"	H.	"	3	6-in.
Broadway .....	Between A and B sts.....	So. B.	L.	"	33	"
Frederick st.....	At Ninth st.....	"	L.	"	14	4-in & 10-in.
Lark st.....	" .....	"	L.	"	13	4-in.
Elwood st. ....	Between Adams and Putnam sts.....	Chsn.	L.	"	280	"
Bennington st. (south side).....	Between Wordsworth and West sts.....	E. B.	L.	"	341	6-in.
Bremen st. ....	At South Line of Bennington st.,	"	L.	"	18	"
	Total of 6 inch.....				1,626	

**Statement of Main Pipe Relaid. — Concluded.**

LOCATION.		District.	High or Low Service.	Size.	Length.	Former Size.
Bowen st.....	Between E and F sts .....	So. B.	L.	4-in.	3	4-in.
Long Island.....	Connection with pipe to Rainsford Island.....	B. H.	H.	"	11	"
	Total 4-inch.....				14	
Carleton st.....	Between West Newton and Berwick pk.....	C. P.	L.	2-in.	95	"
Prospect st.....	Between Merrimac and South Margin sts .....	"	L.	"	110	6 and 8-in.
Bowen st.....	Between E and F sts .....	So. B.	L.	"	175	4-in.
	Total 2-inch.....				380	

**Statement of Private Mains Laid and Abandoned during the Year ending January 31, 1903.***(Not included in Boston Water Department System.)*

For whom.	Where.	District.	High or Low Service.	Size.	Length.
	LAI D.				
J. F. Libby <i>et al.</i> .....	Eliot terrace off Centre st.....	Rox.	L.	4-in.	65
Street Department, Sewer Division....	At 795 Massachusetts ave., Sewer Department yard.....	"	L.	6-in.	42
Childrens' Institu- tion.....	Spring st. Parental School grounds....	W.R.	H.	"	483
Metropolitan S.S. Co.	At Union Wharf .....	C.P.	L.	"	26
	ABANDONED.				
J. F. Libby <i>et al.</i> .....	Eliot terrace off Centre st.....	Rox.	L.	4-in.	65

**Statement of Main Pipe Raised, Lowered and Moved Laterally.**

Note. — This work was occasioned by the operations of corporations, contractors and others, the changing of street grades and sewer construction.

LOCATION.		District.	Size.	High or Low Service.	Length.	Raised, Lowered, or Moved.
Southampton st. . .	From Andrew sq . . . . .	S. B.	30-in.	L.	200	Raised.
Walter st. . . . .	Bet. Weld and Mendum sts..	W. R.	24-in.	H.	300	Lowered.
Tremont st. . . . .	At Camden st. . . . .	C. P.	12-in.	L.	16	Moved.
West Canton st. . . .	" Shawmut ave. . . . .	"	"	L.	16	Lowered.
Ruggles st. . . . .	Near Haskins st. . . . .	ROX.	"	L.	8	Raised.
Vancouver st. . . . .	Between Huntington ave. and Ruggles st. . . . .	"	"	L.	78	Moved.
Green st. . . . .	At Brookside ave. . . . .	W. R.	"	H.	78	Raised and Moved.
Foster st. . . . .	" Commonwealth ave. . . . .	Bri.	"	H.	20	Lowered.
Ashmont st. . . . .	" Washington st. . . . .	Dor.	"	H.	10	"
Dorchester ave. . . .	Opposite No. 2004 . . . . .	"	"	L.	8	Raised.
River st. . . . .	Near Hyde Park line. . . . .	"	"	H.	22	"
Welles ave. . . . .	Opposite Samoset st. . . . .	"	"	L.	8	"
Saratoga st. . . . .	Near Wordsworth st. . . . .	E. B.	"	L.	16	Moved.
	Total of 12-inch. . . . .				280	
Hawley st. . . . .	At Milk st. . . . .	C. P.	8-in.	L.	13	"
State st. . . . .	Between Merchants' row and Congress st. . . . .	"	"	H.	209	"
Cass st. . . . .	At Powell st. . . . .	W. R.	"	H.	7	Lowered.
Centre st. . . . .	" Bellevue st. . . . .	"	"	H.	8	"
Walter st. . . . .	150 feet south of Weld st. . . .	"	"	H.	18	Moved.
Dorchester ave. . . .	Opposite No. 2004 . . . . .	Dor.	"	L.	12	Raised.
Trull st. . . . .	From Hancock st. . . . .	"	"	H.	109	Moved.
Wheatland ave. . . .	At Millet st. . . . .	"	"	H.	24	Raised.
Ellery st. . . . .	" Southampton st. . . . .	So. B.	"	L.	8	Lowered.
	Total of 8-inch. . . . .				408	
Van Renssleaver pl.	Off Tremont st. . . . .	C. P.	6-in.	H.	94	Moved.
Bickford ave.	Near Heath st. . . . .	ROX.	"	H.	8	"
Woodward ave. . . .	Opposite No. 4 . . . . .	"	"	L.	14	"
Lamartine pl. . . . .	At Lamartine st. . . . .	W. R.	"	H.	8	Raised.
Lawndale ter. . . . .	" " " . . . . .	"	"	H.	8	Lowered.
*Off Spring st. . . .	In Parental School grounds.	"	"	H.	220	Raised.
	Carried forward. . . . .				352	

\* Private pipe.

Statement of Main Pipe Raised, Etc. — *Concluded.*

LOCATION.		District.	Size.	High or Low Service.	Length.	Raised, Lowered, or Moved.
	<i>Brought forward.....</i>	.....	.....	.....	352	
Robinwood ave....	Bet. Centre and Enfield sts...	W. R.	6-in.	H.	20	Moved.
Walter st.....	" Bussey and Centre sts....	"	"	H.	45	"
Commonw'lth ave.	Near South st.....	Bri.	"	H.	12	Lowered.
"	At Lake st. ....	"	"	H.	12	Raised.
* Carson st.....	" N. Y., N. H. and H. R.R...	Dor.	"	L.	24	Lowered.
Barnes st.....	216 feet from Dorchester ave.	"	"	L.	8	"
Herbert st.....	At West Tremlett st.....	"	"	H.	80	"
Mascoma st.....	" Fayston st. ....	"	"	H.	17	Moved.
* Millet st.....	Between Wheatland and Talbot aves.....	"	"	H.	160	Raised and Moved.
Milton ave.....	Between Lauriat ave. and Norfolk st.....	"	"	H.	52	Lowered.
Rockdale st.....	At Oakland st.....	"	"	H.	8	"
Tucker st.....	Between Lauriat ave. and Callender st.....	"	"	H.	132	"
West Tremlett st..	Between Washington and Herbert sts.....	"	"	H.	210	Raised.
C st.....	At Bowen st.....	So.B.	"	L.	5	"
Dunham st. ....	" Old Harbor st.....	"	"	L.	92	Lowered.
Cedar st.....	" Bartlett st.....	Chsn.	"	L.	12	Moved.
Lynde st.....	" Austin st.....	"	"	L.	20	Lowered.
Rutherford ave....	Opposite No. 23.....	"	"	L.	10	Moved.
"	Bet. Benedict and Austin sts.	"	"	L.	9	"
Wordsworth st...	At Saratoga st.....	E. B.	"	L.	7	"
	Total of 6-inch. ....	.....	.....	.....	1,287	
Wheaton sq.....	At Lamartine st.....	W. R.	4-in.	H.	11	Lowered.

\* The size of pipe increased. See Statement of Main Pipe Relaid.



**Statement of Location, Size, and Number of Feet of Main Pipe  
Abandoned during the Year ending January 31, 1903.**

LOCATION.		District.	High or Low Service.	Size.	Length.
Brookline ave....	Between Bellevue and Short sts.....	Rox.	L.	40-in.	240
Cambridge st.....	At Staniford st. ....	C. P.	L.	30-in.	20
Southampton st...	From Andrews sq.....	So. B.	L.	"	945
" ....	At second waterway from Andrews sq. ....	"	L.	"	79
Under Chelsea bridge.....	B. & M. R.R. driveway, between Piers Nos. 19 and 20.....	Chsn.	L.	"	14
Total of 30-inch.....					1,058
Southampton st...	At second waterway from Andrews sq.....	So. B.	L.	24-in.	30
Under Chelsea bridge.....	B. & M. R.R. driveway, between Piers Nos. 19 and 20.....	Chsn.	L.	"	126
Total of 24-inch.....					156
Bowdoin st.....	At Beacon st.....	C. P.	H.	16-in.	20
State st.....	Between Chatham row and Commercial st.....	"	L.	"	107
" .....	Between Devonshire st. and Merchants' row.....	"	L.	"	517
Under Chelsea bridge.....	B. & M. R.R. driveway, between Piers Nos. 19 and 20.....	Chsn.	L.	"	637
Total of 16-inch.....					1,281
Bedford st .....	Between Summer and Washington sts.....	C. P.	L.	12-in.	1,108
Causeway st.....	Between Lowell and Leverett sts....	"	L.	"	292
Devonshire st.....	Across State st.....	"	L.	"	89
Harrison ave.....	Between Malden and Union Park sts.	"	L.	"	252
India st.....	At State st.....	"	L.	"	125
State st.....	Between Chatham row and Commercial st.....	"	H.	"	97
Brookline ave....	Between Bellevue st. and Longwood ave.....	Rox.	L.	"	5
Bucknam st.....	Between Wensley st. and Fisher ave.	"	H.	"	12
Harrison ave.....	" Northampton and Zeigler sts. ....	Rox. and C. P.	L.	"	67
Carried forward .....					2,047



Statement of Main Pipe Abandoned. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....				2,047
Vancouver st.....	Across Huntington ave.....	Rox.	L.	12-in.	159
Canterbury st.....	Between Calder and Angell sts.....	W. R.	H.	"	5
Centre st.....	" Forbes and Sheridan sts....	"	H.	"	195
Green st.....	At Brookline ave.....	"	H.	"	64
" .....	" .....	"	H.	"	86
" .....	" .....	"	H.	"	78
S. Huntington ave.	" Perkins st.....	"	H.	"	29
Williams st.....	Over Stony brook.....	"	H.	"	98
Litchfield st.....	Between Cygnet and Elba sts.....	Bri.	L.	"	5
Blue Hill ave.....	At Walk Hill st .....	Dor.	H.	"	38
" .....	" Norfolk st.....	"	H.	"	3
Haven ave.....	From Oakland st.....	"	H.	"	44
Massachusetts ave.	Between Clapp st. and N.Y., N.H. & H. R.R. ....	"	L.	"	5
Moseley st.....	At Columbia road .....	"	L.	"	4
Oakland st.....	Between Rockville and Favre sts....	"	H.	"	1,420
Rockville st.....	From Oakland st.....	"	H.	"	22
Rosewood st.....	" .....	"	H.	"	211
Bennington st. (north side.) ....	Between Ashley and Walley sts.....	E. B.	L.	"	929
Walley st.....	At Bennington st. ....	"	L.	"	83
	Total 12-inch.....				5,525
Green st.....	At Bowdoin sq.....	C. P.	L.	10-in.	9
Capen st.....	" Fuller st.....	Dor.	H.	"	8
Frederick st.....	" Ninth st.....	So. B.	L.	"	5
Main st.....	Over B., R.B. & L. R.R.....	W'th'p	H.	"	128
	Total 10-inch.....				150
Berkeley st.....	At Newbury st.....	C. P.	L.	8-in.	63
Chauncy st.....	" Bedford st.....	"	L.	"	41
Congress st.....	Across State st.....	"	H.	"	35
" .....	" .....	"	L.	"	52
East st.....	At South st.....	"	L.	"	4
Eliot st. ....	" Pleasant st.....	"	L.	"	30
Kilby st.....	" State st.....	"	L.	"	33
	<i>Carried forward</i> .....				263

Statement of Main Pipe Abandoned. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....	.....	.....	.....	263
Merchants' row...	At State st.....	C. P.	L.	8-in.	16
Prospect st.....	Between Merrimac and South Margin sts.....	"	L.	"	4
" .....	Between Merrimac and South Margin sts.....	"	L.	"	34
State st.....	Between Merchants' row and Devonshire st.....	"	H.	"	589
Huntington ave...	At Vancouver st.....	Rox.	L.	"	20
Mozart st.....	" Centre st.....	"	H.	"	8
Brookside ave....	Between Green and Ophir sts.....	W. R.	H.	"	15
" ....	" Cornwall sts....	"	H.	"	214
" ....	At Green st.....	"	H.	"	28
Green st.....	" Brookside ave.....	"	H.	"	60
Mt. Vernon st. ....	Between Garfield and Vermont aves.	"	H.	"	5
South Huntington ave. ....	At Perkins st. ....	"	H.	"	25
Walter st.....	Between Weld and Mendum sts.....	"	H.	"	326
Almont st.....	At Blue Hill ave.....	Dor.	H.	"	76
Faxon st.....	Between Elmont and Kilton sts.....	"	H.	"	5
Fuller st.....	" Morton and Capen sts. ....	"	H.	"	6
Hollingsworth st. .	From Oakland st.....	"	H.	"	325
Lindsey st.....	Between Greenbrier and Waldeck sts.....	"	H.	"	4
Mt. Vernon st....	Between Buttonwood and Von Hillern sts.....	"	L.	"	178
B street.....	Across Broadway.....	So. B.	L.	"	29
Columbia road....	Between Douglass and Vale sts.....	"	L.	"	158
Alford st.....	" Main and West sts.....	Chsn.	L.	"	233
Austin st.....	" Lynde and Washington sts.....	"	L.	"	275
" .....	" Lynde st. and B. and M. R.R. ....	"	L.	"	214
Main st.....	" Alford and Cambridge sts.,	"	L.	"	210
Roland st.....	" Stark and Crescent sts.....	"	L.	"	7
Leyden st. ....	At Bennington st.....	E. B.	L.	"	145
	Total of 8-in.....	.....	.....	.....	3,472
Albion st.....	At Dover st.....	C. P.	L.	6-in.	45
Asylum st.....	" Harrison ave.....	"	L.	"	35
	<i>Carried forward</i> .....	.....	.....	.....	80

Statement of Main Pipe Abandoned. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....				80
Bulfinch st. ....	At Court st. ....	C. P.	H.	6-in.	53
“ pl. ....	“ Bowdoin st. ....	“	H.	“	26
Cambridge st. ....	“ “ sq. ....	“	H.	“	87
“ .....	“ Staniford st. ....	“	H.	“	25
Carleton st. ....	Between Greenwich and Claremont pks. ....	“	L.	“	8
“ .....	“ West Newton st. and Ber- wick pk. ....	“	L.	“	86
Carver st. ....	At Pleasant st. ....	“	L.	“	42
Chardon st. ....	“ Bowdoin sq. ....	“	L.	“	50
Claremont pk. ....	Between Columbus ave. and Carle- ton st. ....	“	L.	“	505
Columbia st. ....	At Bedford st. ....	“	L.	“	28
Corning st. ....	Between Wheeler st. and Shawmut ave. ....	“	L.	“	85
Dover st. ....	“ Harrison ave. and Albany st. ....	“	L.	“	537
East st. ....	“ Atlantic ave. and South st.,	“	L.	“	40
“ .....	At South st. ....	“	L.	“	17
East Brookline st.,	Between Albany and Washington sts. ....	“	L.	“	1,336
East Lenox st. ....	Across Harrison ave. ....	“	L.	“	65
Elm st. ....	Between Hanover and Washington sts. ....	“	H.	“	201
Emerald st. ....	At Dover st. ....	“	L.	“	41
Exchange st. ....	“ State st. ....	“	L.	“	36
Exeter pl. ....	“ Harrison ave. ....	“	H.	“	16
Fairweather st. ...	“ “ “ .....	“	L.	“	17
Fayette st. ....	“ Pleasant st. ....	“	L.	“	22
Friend st. ....	“ Traverse st. ....	“	L.	“	64
“ .....	“ Hanover st. ....	“	L.	“	39
“ .....	“ Causeway and Merrimac sts. ....	“	L.	“	934
Greenwich pk. ....	Between Columbus ave. and Carle- ton st. ....	“	L.	“	157
Harrison ave. ....	“ Bedford and Essex sts. ....	“	L.	“	546
“ .....	“ Essex st. and Hayward pl.,	“	H.	“	27
“ .....	At Bedford st. ....	“	L.	“	25
Hartford st. ....	“ Purchase st. ....	“	L.	“	29
	<i>Carried forward</i> .....				5,224

## Statement of Main Pipe Abandoned. — Continued.

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....				5,224
Howard st.....	At Court st.....	C. P.	H.	6-in.	47
Irvington st.....	" St. Botolph st.....	"	L.	"	3
James st.....	" East Brookline st.....	"	L.	"	29
Kingston st.....	" Bedford st.....	"	L.	"	54
Lancaster st.....	" Merrimac st.....	"	L.	"	19
Lincoln st.....	Between Bedford and Essex sts.....	"	L.	"	374
Lovering place....	At Harrison ave.....	"	L.	"	43
Market st.....	Across Friend and Merrimac sts....	"	L.	"	116
Melrose st.....	At Pleasant st.....	"	L.	"	21
Merrimac st.....	Between Haymarket sq. and Portland st.....	"	L.	"	557
Middlesex st.....	At Dover st.....	"	L.	"	38
Nashua st.....	Between Causeway and Minot sts....	"	L.	"	714
Newbury st.....	" Clarendon and Berkeley sts.	"	L.	"	700
Newcomb st.....	At Harrison ave. ....	"	L.	"	16
Oneida st.....	" " .....	"	L.	"	18
Pembroke st.....	Between Tremont st. and Warren ave.....	"	L.	"	749
Piedmont st.....	At Pleasant st.....	"	L.	"	15
Pitts st.....	" Merrimac st.....	"	L.	"	45
Plympton st.....	Between Harrison ave. and Albany st.....	"	L.	"	424
Prospect st.....	Between Merrimac and South Margin sts.....	"	L.	"	130
Purchase st.....	Between High and Pearl sts.....	"	L.	"	976
Rochester st.....	At Harrison ave.....	"	L.	"	16
Rowe place.....	Off Chauncy st.....	"	L.	"	20
Sargent's wharf..	" Commercial st.....	"	L.	"	42
Seneca st.....	At Harrison ave.....	"	L.	"	19
Shawmut st.....	" Pleasant st.....	"	L.	"	20
Staniford st.....	" Cambridge st.....	"	L.	"	18
St. Botolph st.....	Between West Newton and Irvington sts.....	"	L.	"	575
St. James ave....	At Berkeley st.....	"	L.	"	51
Sudbury st.....	" Merrimac st.....	"	L.	"	42
Tennyson st.....	" Pleasant st.....	"	L.	"	17
Troy st.....	" Harrison ave.....	"	L.	"	14
	<i>Carried forward</i> .....				11,146



Statement of Main Pipe Abandoned. — *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....				11,146
Village st.....	At Dover st.....	C. P.	L.	6-in.	43
Wareham st.....	Between Albany st. and Harrison ave.....	"	L.	"	466
Wellington st.....	Between Columbus ave. and Carleton st.....	"	L.	"	485
West Canton st....	Between Tremont st. and Warren ave.....	"	L.	"	560
Winchester st....	At Pleasant st.....	"	L.	"	17
Bellevue st.....	" Brookline ave.....	Rox.	L.	"	46
Brookledge st....	From Humboldt ave.....	"	H.	"	4
Cabot st.....	At Linden Park st.....	"	L.	"	29
Chestnut ave.....	" Centre st.....	"	H.	"	17
Eustis st.....	Across Harrison ave.....	"	L.	"	80
Fisher ave.....	At Bucknam st.....	"	H.	"	32
Hammond st.....	Between Shawmut ave and Tremont st.....	"	L.	"	1,152
Hampshire st....	At Linden Park st.....	"	L.	"	37
Harrison ave.....	Between Northampton and Zeigler sts.....	Rox. and C. P.	L.	"	2,612
Holborn st.....	Between Gannett and Warren sts....	Rox.	H.	"	273
Lamont st.....	At Linden Park st.....	"	L.	"	35
Linden Park st...	Between Roxbury and Tremont sts..	"	L.	"	1,693
Mozart st.....	At Centre st.....	"	H.	"	30
Oak st.....	Off Norfolk ave.....	"	L.	"	362
Palmer st.....	Across Harrison ave.....	"	L.	"	68
Rochdale st.....	At Fenner st.....	"	L.	"	4
Rockland st.....	Between Walnut ave. and Warren st.	"	H.	"	866
Shawmut ave.....	" Vernon and Roxbury sts...	"	L.	"	447
Sherman st.....	At Rockland st.....	"	H.	"	24
Simmons st.....	" Linden Park st.....	"	L.	"	35
Short st.....	" Brookline ave.....	"	L.	"	5
Vila st.....	" Longwood ave.....	"	L.	"	18
Warwick st.....	" Hammond st.....	"	L.	"	28
Westminster st...	" " "	"	L.	"	26
Winthrop st.....	Between Dennis st. and Brook ave..	"	L.	"	162
Zeigler st.....	Across Harrison ave.....	"	L.	"	63
	<i>Carried forward</i> .....				20,865



Statement of Main Pipe Abandoned.— *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....				20,865
Barbara st.....	At South Huntington ave.....	W. R.	H.	6-in.	4
Calder st.....	Between Blue Hill ave. and Canterbury st.....	"	H.	"	4
Cohasset st. ....	At the brook.....	"	H.	"	77
Creighton st.....	" Centre st .....	"	H.	"	41
Garden st.....	Between Maple and Corey sts.....	"	H.	"	299
Poplar st.....	At Hyde Park line.....	"	H.	"	4
Stony Brook st....	" Williams st.....	"	H.	"	78
Arden st .....	Between Coolidge road and Hooker st.....	Bri.	L.	"	200
Donnybrook road	At Faneuil st.....	"	H.	"	40
Elko st.....	Between Cambridge and Sparhawk sts.....	"	H.	"	3
Leamington road	Between Commonwealth ave. and Wallingford road.....	"	H.	"	15
Snow st .....	Between Washington and Union sts.	"	H.	"	4
Ashland st .....	At Capen st.....	Dor.	L.	"	3
Blanche st .....	Between Preston and Greenhill sts..	"	L.	"	60
Blue Hill ave.(west side).....	Between Collins st. and N.Y., N.H. & H. R.R. ....	"	H.	"	4
Capen st.....	Between Blanche and Ashland sts...	"	L.	"	198
Carson st.....	At N.Y., N.H. & H. R.R.....	"	L.	"	24
Corona st.....	Between Geneva ave. and Bowdoin st.....	"	H.	"	5
Greenhill st. ....	At Capen st.....	"	L.	"	3
Herbert st.....	" West Tremlett st.....	"	H.	"	3
Millet st.....	Between Wheatland and Talbot aves.	"	H.	"	160
Moultrie st.....	" Washington and Seaborn sts.....	"	H.	"	4
" .....	From Washington st.....	"	H.	"	312
B st... ..	Across Broadway .....	So. B.	L.	"	53
Broadway .....	At Dorchester ave.....	"	L.	"	35
" .....	Between A and B sts. ....	"	L.	"	681
" .....	" H and Dorchester sts.....	"	L.	"	1,091
Dorchester ave....	" Second and A sts.....	"	L.	"	1,105
E st.....	At Ninth st.....	"	L.	"	30
Fifth st.....	" Dorchester st.....	"	L.	"	43
	<i>Carried forward</i> .....				25,448

Statement of Main Pipe Abandoned.— *Continued.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward</i> .....				25,448
First st. ....	At Dorchester st. ....	So. B.	L.	6-in.	17
Fourth st. ....	“ “ .....	“	L.	“	44
“ .....	“ Dorchester ave. ....	“	L.	“	44
“ .....	“ D st. ....	“	L.	“	87
“ .....	Across A st. ....	“	L.	“	75
G st. ....	Between Eighth st. and Columbia road .....	“	L.	“	100
Mercer st. ....	Between Vale and Newman sts. ....	“	L.	“	188
Old Harbor st. ....	“ Eighth st. and Columbia road .....	“	L.	“	287
Sixth st. ....	At Dorchester st. ....	“	L.	“	48
Third (East) st. ....	“ “ .....	“	L.	“	31
“ (West) st. ....	“ “ .....	“	L.	“	22
“ st. ....	Between A and B sts. ....	“	L.	“	582
Vale st. ....	“ Columbia road and Mercer st. ....	“	L.	“	536
Common st. ....	Between Park and Adams st. ....	Chsn.	L.	“	347
Henley st. ....	“ “ Warren sts. ....	“	L.	“	83
Lynde st. ....	At Austin st. ....	“	L.	“	50
Main st. ....	Between Alford and Cambridge sts. ..	“	L.	“	56
Park st. ....	“ Henley and Common sts. ....	“	L.	“	329
West st. ....	At Alford st. ....	“	L.	“	54
Bennington st. ....	Between Chelsea st. and Neptune road .....	E. B.	L.	“	805
Bennington (south side) st. ....	Between Wordsworth and West sts. ..	“	L.	“	341
Bremen st. ....	At Brooks st. ....	“	L.	“	4
“ .....	“ north line of Bennington st. ....	“	L.	“	173
“ .....	“ south line of Bennington st. ....	“	L.	“	159
Brooks st. ....	Between Bremen and Chelsea sts. ....	“	L.	“	181
Byron st. ....	“ Bennington and Horace sts. ....	“	L.	“	204
	Total of 6-inch. ....				30,295
Brattle sq. ....	At Elm st. ....	C. P.	H.	4-in.	15
Carleton st. ....	Between West Newton st. and Berwick park. ....	“	L.	“	200
“ “ .....	Between West Newton st. and Berwick park .....	“	L.	“	17
	<i>Carried forward</i> .....				232

Statement of Main Pipe Abandoned. — *Concluded.*

LOCATION.		District.	High or Low Service.	Size.	Length.
	<i>Brought forward.....</i>				232
Chickering place..	Between Washington st. and Harrison-ave. extension.....	C. P.	H.	4-in	260
Dartmouth place..	Off Dartmouth st.....	"	L.	"	510
Davis st.....	At Harrison ave.....	"	L.	"	38
Decatur st.....	" " " .....	"	L.	"	37
East-street place..	Off East st.....	"	L.	"	232
Fay st.....	At Dover st.....	"	L.	"	12
Florence st.....	" Harrison ave.....	"	L.	"	39
Gloucester place..	Off " " .....	"	L.	"	222
Greenwich park...	Between Columbus ave. and Carleton st.....	"	L.	"	358
Sewall place.....	Off Milk st.....	"	H.	"	112
Waverly place....	" South st.....	"	L.	"	201
Woodbury st.....	Between Shawmut ave. and Washington st.....	"	L.	"	345
Cabot st.....	Between Vernon and Tremont sts...	Rox.	L.	"	1,998
Taber st.....	Across Harrison ave.....	"	L.	"	70
Brookside ave....	Between Green and Cornwall sts...	W. R.	H.	"	210
" " .....	At Green st.....	"	H.	"	16
Perkins-st. court..	Off Perkins st.....	"	H.	"	90
Fox ave.....	At Adams st.....	Dor.	H.	"	6
Bowen st.....	Between E and F sts.....	So. B.	L.	"	183
" " .....	At Dorchester st.....	"	L.	"	42
Frederick st.....	" Ninth st.....	"	L.	"	9
Lark st.....	" " " .....	"	L.	"	13
Ellwood st... ..	Between Adams and Putnam sts....	Chsn.	L.	"	280
Long Island.....	Connection with Pipe to Rainsford Island .....	B. H.	H.	"	96
	Total of 4-inch.....				5,611
Carleton st.....	Between West Newton st. and Berwick park.....	C. P.	L.	2-in.	95
Prospect st.....	Between Merrimac and South Margin sts.....	"	L.	"	110
	Total of 2-inch.....				205

Table showing Length of Distribution Mains Laid, Relaid, and Abandoned during the Year 1902, and the Total Length of the Distribution System of the City of Boston, January 31, 1903.

	DIAMETER OF MAINS IN INCHES.															Totals.	
	48	42	40	36	30	28	24	20	16	12	10	8	6	4	3		2
Total connected with system, January, 31, 1902 .....	33,671	16,813	23,104	39,984	85,029	244	79,888	93,824	180,072	1,107,665	97,957	542,314	1,392,779	95,612	7,102	3,485	3,799,543
Length laid and relaid dur- ing the year.....	.....	.....	1,367	.....	2,463	.....	19	72	9,128	27,746	12,463	22,971	10,892	14	.....	1,000	88,135
Length abandoned during the year.....	.....	.....	240	.....	1,058	.....	156	.....	1,281	5,525	150	3,472	30,295	5,611	.....	205	47,993
Total connected with sys- tem, January 31, 1903.....	33,671	16,813	24,231	39,984	86,434	244	79,751	93,896	187,919	1,129,886	110,270	561,813	1,373,376	90,015	7,102	4,280	3,830,685 or 727.2 m.

## Statement of Hydrant, Blow-off, and Reservoir Pipes, January 31, 1903.

	DIAMETER IN INCHES.								Totals.
	16	12	10	9	8	6	4	3	
Total length connected with system, January 31, 1902.....	472	6,777	105	2,558	1,115	36,957	7,497	3	55,484
Length laid and relaid during the year.....	.....	58	.....	.....	173	2,871	51	.....	3,153
Length abandoned during the year.....	.....	236	.....	52	.....	828	596	.....	1,712
Total length connected with system, January 31, 1903.....	472	6,599	105	2,506	1,288	39,000	6,952	3	56,925

## Main Gates Established and Abandoned during the Year, and Number in System, January 31, 1903.

	DIAMETER IN INCHES.													Totals.
	48	40	36	30	24	20	16	12	10	8	6	4	3	
Total number in system, January 31, 1902.....	1	5	28	46	64	67	321	2,128	247	1,362	4,280	558	10	9,117
Established during the year.....	.....	.....	.....	2	1	.....	17	110	59	112	76	3	.....	380
Abandoned during the year.....	.....	.....	.....	1	1	.....	2	20	.....	18	141	18	.....	201
Total number in system, January 31, 1903.....	1	5	28	47	64	67	336	2,218	306	1,456	4,215	543	10	9,296



**Blow-off Gates Established and Abandoned during the Year.**

	DIAMETER IN INCHES.			Totals.
	12	6	4	
Established during the year. ....	1	5	7	13
Abandoned during the year.....		4	3	7
Increase .....	1	1	4	6

**Hydrant Gates Established and Abandoned during the Year  
and Total Number in System, January 31, 1903.**

	DIAMETER.	Totals.
	6-inches.	
Total number in system, January 31, 1902.....	9	9
Established during the year.....		
Abandoned during the year.....		
Total number in system, January 31, 1903.....	9	9

**Private Hydrant Gates Established and Abandoned  
during the Year.**

	DIAMETER.	Totals.
	6-inches.	
Established during the year.....	1	1
Abandoned during the year.....		
Total number in system, January 31, 1903.....	1	1

## Hydrants Established and Abandoned during the Year.

	ESTABLISHED.					Totals.	ABANDONED.					Totals.
	Lowry.	Boston Lowry.	Ordinary Post.	Bachelor Post.	Boston.		Lowry.	Boston Lowry.	Ordinary Post.	Bachelor Post.	Boston.	
City Proper (Public).....	14	3	2	89	....	108	46	3	16	4	32	101
South Boston (Public).....	1	...	3	55	....	59	7	4	12	1	30	54
East Boston (Public).....	....	2	....	30	....	32	9	1	11	....	....	21
Roxbury (Public).....	2	6	2	73	....	83	36	5	19	5	1	66
“ (Private).....	1	...	....	....	....	1	....	....	....	....	....	...
Dorchester (Public).....	....	9	3	91	1	104	34	18	22	....	3	77
“ (Private).....	....	....	2	....	....	2	....	....	....	....	....	....
West Roxbury (Public).....	1	5	1	28	....	35	5	6	11	....	....	22
“ “ (Private).....	....	....	1	....	....	1	....	....	....	....	....	....
Brighton (Public).....	....	3	....	13	....	16	....	6	2	....	2	10
Charlestown (Public).....	....	....	....	9	....	9	3	1	1	....	....	5
Quincy.....	....	1	....	....	....	1	....	....	....	....	....	....
Total number of Public....	18	28	11	388	1	446	140	44	94	10	68	356
Total number of Private and Suburban.....	1	1	3	....	....	5	....	....	....	....	....	....

**Total Number of Hydrants Connected with Distribution  
System, January 31, 1903.**

	Lowry.	Boston Lowry.	Ordinary Post.	Bachelor Post.	Boston.	Totals.
City Proper (Public).....	672	50	280	309	153	1,464
“ “ (Private).....			11		44	55
South Boston (Public).....	225	29	171	81	78	584
“ “ (Private).....	2		13		32	47
East Boston (Public).....	134	26	200	35	7	402
“ “ (Private).....	8		7		25	40
Roxbury (Public).....	534	91	442	161	42	1,270
“ (Private).....	2				10	12
Dorchester (Public).....	435	232	977	154	30	1,828
“ (Private).....		1	4		4	9
West Roxbury (Public).....	115	234	644	40	30	1,063
“ “ (Private).....			15		1	16
Brighton (Public).....	70	82	392	14	21	579
“ (Private).....			7		2	9
Charlestown (Public).....	186	36	39	43	2	306
“ (Private).....	14	1	36		6	57
Deer Island (Private).....			19			19
Long Island (Private).....			6			6
Thompson's Island (Private).....			2			2
Gallop's Island (Private).....			1		1	2
Rainsford's Island (Private).....		3	1		1	5
Quincy ..		1	11			12
Brookline.....		2				2
<b>Total number of Public Hydrants.....</b>	<b>2,371</b>	<b>780</b>	<b>3,145</b>	<b>537</b>	<b>363</b>	<b>7,496</b>
<b>Total number of Private and Suburban Hy- drants .....</b>	<b>26</b>	<b>8</b>	<b>133</b>	<b>.....</b>	<b>126</b>	<b>293</b>

**Water Posts.****LOCATION OF WATER POSTS ESTABLISHED AND ABANDONED DURING THE YEAR.***Established.*

Centre street, near Corey street, West Roxbury, about 103 feet west of old location.

Leyden street, near Bennington street, East Boston.

Main street, opposite Cambridge street, Charlestown.

Seaver street, 269 feet southeast from Humboldt avenue, Roxbury.

*Abandoned.*

Alford street, opposite West street, Charlestown.

Center street, near Corey street, West Roxbury.

Humboldt avenue, near Waumbeck street, Roxbury.

Seaver street, at Humboldt avenue, Roxbury.

**Number of Water Posts Connected with System, January 31, 1903.**

DISTRICT.	Number Connected with System January 31, 1902.	Established during the Year.	Abandoned during the Year.	Number Connected with System January 31, 1903.
City Proper .....	78	.....	.....	78
South Boston.....	39	.....	.....	39
East Boston.....	41	1	.....	42
Roxbury.....	81	1	2	80
Dorchester.....	106	.....	.....	106
West Roxbury .....	96	1	1	96
Brighton.....	54	.....	.....	54
Charlestown .....	22	1	1	22
Totals .....	517	4	4	517

**Fountains.**

Established and abandoned during the year and number in service January 31, 1903.

*Style.**Established.*

- (E) Eighth street, at gasometer, South Boston.
- (B) Hancock square, Charlestown (gift of Mrs. J. Huntington Smith).

*Abandoned.*

- (D) Austin street, near Boston & Maine R.R., Charlestown.
- (E) Bowdoin square, City Proper.
- (E) Dorchester, near Eighth street, South Boston.
- (D) Foundry street, opposite First street, South Boston.
- (E) Harrison avenue, near Northampton street, City Proper.
- (E) Tremont street, at Mason street, City Proper.

*Style Changed.*

Fountain in Peabody square, Ashmont, changed from style F to style B.

## Number in Service January 31, 1903.

DISTRICT.	Style A	Style B	Style C	Style D	Style E	Style F	Totals.
City Proper.....	11	4	8	.....	12	.....	35
South Boston.....	3	1	3	.....	5	.....	12
East Boston.....	.....	4	4	.....	4	.....	12
Roxbury.....	9	3	2	.....	5	.....	19
Dorchester.....	.....	3	.....	1	.....	7	11
West Roxbury.....	4	1	.....	1	2	.....	8
Brighton.....	5	.....	1	.....	.....	.....	6
Charlestown.....	1	3	.....	1	4	.....	9
Totals.....	33	19	18	3	32	7	112

*Style.*

## NOTE.

(A) Indicates fountains for man and beast, with automatic fixtures for man and beast in warm weather, and a continuous flow of water for beasts in cold weather.

(B) Indicates fountain for beasts only. Continuous flow of water all the year.

(C) Indicates fountains for man only. Automatic fixtures. In service during warm weather only.

(D) Indicates fountains for man and beast. Automatic fixtures for both. In service during warm weather only.

(E) Indicates cold water fountains for man only. Automatic fixtures. In service during warm weather only.

(F) Indicates fountains for man and beast, with automatic fixtures for man in warm weather, and a continuous flow of water for beasts all the year.

**Air Cocks.***Established.*

Size.	Diameter of Main.	LOCATION.	District.
2-in.	16-in.	Staniford st., at Cambridge st. ....	City Proper.
"	"	Joy st., at Mt. Vernon st. ....	"
"	30-in.	Southampton st., second waterway from Andrew sq. ....	So. Boston.
"	10-in.	Broadway, at railroad bridge.....	"
"	24-in.	Brook st., at Condor st. (Pumping Station yard).	East Boston.
"	30-in.	Washington st., at No. 620.....	Dorchester.
"	"	Washington st., at Burt st. ....	"
"	12-in.	Oakland st., at railroad bridge.....	"
1½-in.	10-in.	Third st., at railroad bridge.....	So. Boston.
3½-in.	12-in.	Long Island, on new 12-in. main, between Rainsford Island pipe and a point opposite Superintendent's residence.....	Bost. Harbor.
5-in.	10-in.	Main st., at railroad bridge.....	Winthrop.



*Abandoned.*

Size.	Diameter of Main.	LOCATION.	District.
1½-in.	30-in.	Southampton st., second waterway from Andrew sq.....	So. Boston.
1-in.	"	Cambridge st., at Staniford st. ....	City Proper.
"	6-in.	Linden Park st., over Stony brook.....	Roxbury.
½-in.	24-in.	Washington st., at State st.....	City Proper.

**Blow-off Cocks.***Established.*

Size.	LOCATION.	District.
1-in.	Walley st., at Orient ave.....	East Boston.
1½-in.	Perkins pl., at No. 7.....	Roxbury.

*Abandoned.*

Size.	LOCATION.	District.
½-in.	Hall st., at Call st.....	W. Roxbury.

**Fire Reservoirs.**

Connections with Boston Water Department system abandoned at :

Broad street, at State street, City Proper.  
 Bulfinch street, at Court street, City Proper.  
 Carver street, at Pleasant street, City Proper.  
 Congress street, at State street, City Proper.  
 East street, between Atlantic avenue and South street, City Proper.  
 Endicott street, at Hanover street, City Proper.  
 Friend street, at Traverse street, City Proper.  
 Woodbury street, at Washington street, City Proper.  
 Broadway, between A and B streets, South Boston.  
 Linden Park street, at Roxbury street, Roxbury.  
 Roxbury street, at Washington street, Roxbury.  
 Dorchester avenue, at Adams street, Dorchester.

## Statement of Service Pipes Laid and Abandoned during the Year ending January 31, 1903.

SIZE OF SERVICES LAID AND ABANDONED.	CITY PROPER.		SOUTH BOSTON.		EAST BOSTON.		ROXBURY.		DORCHES-TER.		WEST ROXBURY.		BRIGHTON.		CHARLES-TOWN.		TOTALS.	
	Number of	Length in Feet.	Number of	Length in Feet.	Number of	Length in Feet.	Number of	Length in Feet.	Number of	Length in Feet.	Number of	Length in Feet.	Number of	Length in Feet.	Number of	Length in Feet.	Number of	Length in Feet.
8-inch laid.....	1	23	1	126	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1	208
6 " ".....	26	650	4	180	.....	.....	1	24	1	35	.....	.....	.....	.....	.....	.....	8	1,120
4 " ".....	19	635	8	.....	.....	.....	3	64	4	132	.....	.....	.....	.....	4	94	45	733
4 " ".....	24	541	.....	.....	.....	.....	5	98	.....	.....	.....	.....	.....	.....	.....	.....	22	716
3 " ".....	7	290	1	17	.....	.....	.....	158	.....	.....	.....	.....	.....	.....	.....	.....	30	290
3 " ".....	18	400	3	74	.....	.....	5	182	.....	.....	.....	.....	.....	.....	.....	.....	7	837
2 " ".....	2	82	1	20	.....	.....	.....	.....	2	23	.....	.....	.....	.....	.....	.....	33	249
1 1/2 " ".....	22	620	4	129	.....	.....	7	209	.....	.....	.....	.....	.....	.....	.....	.....	10	1,177
1 1/2 " ".....	6	165	.....	.....	.....	.....	.....	.....	2	20	.....	.....	.....	.....	.....	.....	43	248
1 1/2 " ".....	12	309	2	86	.....	.....	2	40	5	116	.....	.....	.....	.....	.....	.....	9	643
1 1/2 " ".....	2	31	.....	.....	.....	.....	1	28	.....	.....	.....	.....	.....	.....	.....	.....	24	59
1 " ".....	47	1,397	1	22	.....	.....	1	194	4	107	.....	.....	.....	.....	.....	.....	3	2,136
1 " ".....	22	571	3	86	.....	.....	4	121	2	24	.....	.....	.....	.....	.....	.....	74	967
1 " ".....	25	819	4	436	.....	.....	3	64	2	21	.....	.....	.....	.....	.....	.....	36	1,597
1 " ".....	7	147	.....	.....	.....	.....	1	20	.....	.....	.....	.....	.....	.....	.....	.....	43	664
1 " ".....	61	1,332	67	1,314	.....	.....	121	2,876	.....	.....	.....	.....	.....	.....	.....	.....	12	20,582
1 " ".....	187	4,376	23	616	.....	.....	43	1,344	22	7,816	111	2,620	74	1,903	47	1,104	806	10,060
1 " ".....	.....	.....	6	154	.....	.....	8	210	8	231	.....	.....	.....	.....	20	466	51	1,670
Total laid.....	236	6,091	95	2,384	71	1,883	155	3,811	284	8,270	127	3,058	81	2,152	58	1,367	1,107	29,016
Total abandoned.....	252	6,297	34	1,319	23	3,137	60	1,821	32	1,110	10	199	7	287	35	770	453	14,940
Net increase.....	*16	*206	61	1,065	48	*1,254	95	1,990	252	7,160	117	2,859	74	1,865	23	597	654	14,076

\* Decrease.

Total number of service pipes, 89,337.

Aggregate length of same, 2,471,227 feet.

**Maintenance Work of Miscellaneous Character Performed  
during the Year ending January 31, 1903.**

	Total Number during the Year.
Air cocks tested . . . . .	72
Boxes covering main pipe on bridges repaired . . . . .	6
Dead ends blown off on account of bad water . . . . .	1,132
Fountain repairs . . . . .	308
Fountains and troughs cleaned and inspected . . . . .	2,491
Gates in service oiled and tested for general efficiency, . . . . .	9,282
Gates renewed on account of deterioration . . . . .	14
Gates repaired . . . . .	215
Gate boxes cleared of mud and water . . . . .	489
Gate boxes renewed . . . . .	226
Gate boxes repaired . . . . .	849
Gate cover salted in cold weather . . . . .	4,049
Gate frames and covers renewed . . . . .	169
Hydrant barrels changed for various reasons . . . . .	146
Hydrant barrels changed on account of street grading, . . . . .	47
Hydrant boxes cleared of mud and water . . . . .	1,668
Hydrant boxes renewed . . . . .	210
Hydrant boxes repaired . . . . .	525
Hydrant frames and covers renewed . . . . .	95
Hydrant inspections in cold weather . . . . .	175,704
Hydrants hayed as protection in cold weather . . . . .	359
Hydrants oiled and tested for general efficiency . . . . .	1,379
Hydrants painted . . . . .	3,502
Hydrants repaired . . . . .	1,023
Investigations made where further action on the part of Water Department was unnecessary . . . . .	1,179
Locations of gates marked . . . . .	20,435
Main pipe repairs caused by :	
Blasting . . . . .	5
Cap blown out . . . . .	1
Defect in sleeve . . . . .	1
Exhaust steam and smoke from locomotives loosened rivets . . . . .	2
Gas Company tapped our mains by mistake . . . . .	2
Ice . . . . .	1
Joints drawn . . . . .	177
Old pipe . . . . .	4
Pick-hole . . . . .	1
Rust . . . . .	6
Set screws loose . . . . .	1
Settlement . . . . .	17
Settlement and action of tides . . . . .	2
Sewer manhole built on main pipe . . . . .	1
Split pipe . . . . .	1
Vibration . . . . .	5

	Total Number during the Year.
Weight of building . . . . .	1
No cause assigned . . . . .	3
Pavement repairs . . . . .	2,240
Service pipe repairs, caused by :	
Blasting . . . . .	4
Broken by steam roller . . . . .	27
Broken by foundation wall . . . . .	36
Covers to S. W. uprights loose . . . . .	92
Defective joints . . . . .	51
Defective pipes . . . . .	63
Defective couplings . . . . .	73
Electrolytic action . . . . .	15
Frost . . . . .	87
Knawed by rats . . . . .	17
Main cocks required renewal . . . . .	57
Main uprights required renewal . . . . .	50
Main uprights too high . . . . .	22
Pipe stolen . . . . .	1
Pipes worn out . . . . .	29
Settlement of earth . . . . .	319
Sewer construction . . . . .	27
Sidewalk cocks required renewal . . . . .	145
Sidewalk uprights above and below grade . . . . .	7,268
Sidewalk uprights in way of edgestones . . . . .	45
Sidewalk uprights required renewal . . . . .	68
Stopped by dirt . . . . .	67
Stopped by fish . . . . .	53
Stopped by gasket . . . . .	21
Stopped by rust . . . . .	323
Struck by pick . . . . .	124
Service pipes (portions of) changed from $\frac{1}{2}$ inch to $\frac{3}{8}$ inch . . . . .	3
Service pipes changed from tin-lined to all lead . . . . .	3
Service pipes extended on account of street widening . . . . .	3
Service pipes lowered as protection from frost . . . . .	7
Service pipes moved from way of various corporations, . . . . .	44
Service pipes shut off and let on to permit owners to make repairs . . . . .	391
Sidewalk cocks and uprights given to individuals to apply on private pipes . . . . .	41
Water post repairs of various kinds . . . . .	345
Water posts numbered . . . . .	415

In addition to the foregoing :

Main pipes, in danger of collapse through the operations of various contractors and corporations, were watched night and day. This refers especially to along the line of the Metropolitan sewer in West Roxbury, where blasting was done to a consider-



able extent, and in State street, city, where the East Boston tunnel is in course of construction. This latter work necessitated extensive changes in the arrangement of our pipes, all of which were carried out without accident or hitch, although under the most unfavorable conditions.

The pipes in the harbor were watched and, when necessary, protected from the incursions of tide water.

Test holes were dug along the line of the 30-inch low-service main in Tremont street, between Dover and Ruggles streets, to enable the Engineering Department to determine the condition of the pipe.

The syphon pipes at the different bridges were emptied during the cold weather and refilled as soon as weather conditions would permit.

Inspectors were constantly employed looking after the interests of the Water Department where corporations and contractors were at work. Conduits and other underground fixtures are being laid in the already overcrowded streets of the city, and it is always a great temptation to those in charge of this work to either lay their conduit over our main or else so near to it as to make it impossible to reach it to make repairs. This is a serious matter, and nothing short of eternal vigilance on our part serves to protect us.

STATEMENT OF STOCK MANUFACTURED FROM THE ROUGH  
IN THE MACHINE SHOP, BLACKSMITH SHOP, AND CAR-  
PENTER SHOP DURING THE YEAR ENDING JANUARY  
31, 1903.

## MACHINE AND BLACKSMITH SHOPS.

Valves:			
3-inch . . . . .	23		
4 " . . . . .	56		
6 " . . . . .	51		
8 " . . . . .	101		
10 " . . . . .	66		
12 " . . . . .	81		
16 " . . . . .	1		
	<u>379</u>		
Hydrants:			
Batchelder . . . . .	326		
Lowry . . . . .	56		
	<u>382</u>		
Corporation cocks:			
$\frac{5}{8}$ -inch . . . . .	2,226		
$\frac{3}{4}$ " . . . . .	388		
1 " . . . . .	137		
1 $\frac{1}{4}$ " . . . . .	74		
1 $\frac{1}{2}$ " . . . . .	66		
	<u>2,891</u>		
Angle Cocks, $\frac{5}{8}$ -inch . . . . .	130		
Water-post cocks:			
1 $\frac{1}{2}$ -inch . . . . .	79		
2 " . . . . .	22		
	<u>101</u>		
Air cocks:			
1-inch . . . . .	24		
1 $\frac{1}{2}$ " . . . . .	5		
2 " . . . . .	1		
	<u>30</u>		
Sidewalk cocks, 1-inch . . . . .	66		
Tee cocks, $\frac{5}{8}$ -inch . . . . .	5		
Waste cocks, $\frac{1}{2}$ -inch . . . . .	123		
Combination couplings:			
1-inch . . . . .	100		
1 $\frac{1}{2}$ " . . . . .	100		
2 " . . . . .	25		
	<u>225</u>		
Male couplings:			
$\frac{1}{2}$ -inch . . . . .	50		
$\frac{5}{8}$ " . . . . .	406		
1 " . . . . .	20		
2 " . . . . .	82		
	<u>558</u>		
Female couplings:			
$\frac{1}{2}$ -inch . . . . .	126		
$\frac{5}{8}$ " . . . . .	224		
$\frac{3}{4}$ " . . . . .	12		
1 " . . . . .	10		
	<u>372</u>		
Coupling nuts:			
$\frac{1}{2}$ -inch . . . . .	50		
$\frac{5}{8}$ " . . . . .	3,873		
$\frac{3}{4}$ " . . . . .	496		
1 " . . . . .	342		
1 $\frac{1}{4}$ " . . . . .	155		
1 $\frac{1}{2}$ " . . . . .	253		
2 " . . . . .	137		
	<u>5,306</u>		
Coupling tubes:			
$\frac{5}{8}$ -inch . . . . .	4,418		
$\frac{3}{4}$ " . . . . .	206		
1 " . . . . .	58		
1 $\frac{1}{4}$ " . . . . .	143		
1 $\frac{1}{2}$ " . . . . .	87		
2 " . . . . .	103		
	<u>5,015</u>		
Main nipples:			
2-inch . . . . .	23		
2 $\frac{1}{2}$ " . . . . .	20		
	<u>43</u>		
Meter nipples:			
$\frac{5}{8}$ -inch . . . . .	33		
$\frac{3}{4}$ " . . . . .	100		
1 " . . . . .	79		
1 $\frac{1}{2}$ " . . . . .	100		
2 " . . . . .	8		
	<u>320</u>		
Solder nipples:			
1-inch . . . . .	93		
1 $\frac{1}{4}$ " . . . . .	30		
1 $\frac{1}{2}$ " . . . . .	1		
2 " . . . . .	33		
	<u>157</u>		
Reducing nipples:			
$\frac{5}{8}$ -inch . . . . .	240		
$\frac{3}{4}$ " . . . . .	112		
	<u>352</u>		
Water-post nipples		40	
Combination meter nipples,			
1-inch . . . . .	39		
Bolts:			
Lowry hydrant . . . . .	60		
Post hydrant . . . . .	1,494		
Gate, 8-inch . . . . .	106		
Eye . . . . .	16		
1 $\frac{1}{2}$ by $\frac{3}{8}$ . . . . .	3		
	<u>1,679</u>		

Jointers :					Hydrant pots . . . . .	44
4-inch . . . . .	1				Lead pots . . . . .	11
6 " . . . . .	15				Thimbles, 4½-inch . . . . .	25
8 " . . . . .	5				Gate pins . . . . .	4,200
12 " . . . . .	21				Sidewalk uprights . . . . .	1,155
16 " . . . . .	8				Set screws, 1 by ⅝-inch . . . . .	64
20 " . . . . .	1				Puddling heads . . . . .	6
30 " . . . . .	1				Screws, 2½-inch . . . . .	183
	—	52			Hydrant waste valves . . . . .	126
Spindles :					Main screws . . . . .	167
2½-inch . . . . .	111				Spindle glands . . . . .	216
4½ " . . . . .	259				Independant glands . . . . .	320
	—	370			Hydrant collars, large . . . . .	126
Iron plugs :					Hydrant collars, small . . . . .	733
⅝-inch . . . . .	599				Packing rings . . . . .	200
1 " . . . . .	120				Hydrant wastes . . . . .	369
	—	719			Lead washers, ¾-inch . . . . .	4

## CARPENTER SHOP.

Lowry hydrant boxes . . . . .	129	Boston hydrant box pieces :	
Post hydrant boxes . . . . .	554	1-inch . . . . .	160
Boston Lowry hydrant boxes . . . . .	36	2 " . . . . .	90
Boston hydyant boxes . . . . .	20	3 " . . . . .	65
Gate boxes, large . . . . .	49	4 " . . . . .	21
Gate boxes, small . . . . .	649	6 " . . . . .	1
Deacon meter boxes . . . . .	6		— 337
Lowry hydrant box tops . . . . .	60	Gate box pieces :	
Post hydrant box tops . . . . .	148	1-inch . . . . .	650
Boston hydrant box tops . . . . .	55	2 " . . . . .	475
Gate box (large) tops . . . . .	30	3 " . . . . .	305
Gate box (small) tops . . . . .	295	4 " . . . . .	95
Lowry hydrant box pieces :		9 " . . . . .	35
1-inch . . . . .	526	10 " . . . . .	10
2 " . . . . .	430	12 " . . . . .	26
3 " . . . . .	330		— 1,596
4 " . . . . .	95	Wooden horses . . . . .	72
	— 1,381		

## FITTINGS AND TOOLS RENOVATED BY MACHINE SHOP.

Valves :		Corporation cocks :	
3-inch . . . . .	3	⅝-inch . . . . .	50
4 " . . . . .	14	¾ " . . . . .	23
6 " . . . . .	32	1 " . . . . .	22
8 " . . . . .	4	1¼ " . . . . .	11
10 " . . . . .	3	1½ " . . . . .	9
12 " . . . . .	5		— 115
16 " . . . . .	1	Angle cocks, ⅝-inch . . . . .	6
	— 62	Water-post cocks, 1½-inch . . . . .	9
Hydrants :		Sidewalk cocks, 1 inch . . . . .	11
Bachelor . . . . .	12	Male couplings :	
Lowry . . . . .	68	⅝-inch . . . . .	56
Post, ordinary . . . . .	20	¾ " . . . . .	8
	— 100	1 " . . . . .	13
			— 77

Female couplings, $\frac{5}{8}$ -inch . . . . .	224	Coupling tubes :		
Reducing nipples, $\frac{3}{4}$ -inch . . . . .	5	$\frac{5}{8}$ -inch . . . . .	560	
		$\frac{3}{4}$ " . . . . .	53	
Coupling nuts :		$1\frac{1}{4}$ " . . . . .	8	
$\frac{5}{8}$ -inch . . . . .	826		—	621
$\frac{3}{4}$ " . . . . .	41	Bolts :		
1 " . . . . .	46	Lowry hydrant . . . . .	29	
$1\frac{1}{4}$ " . . . . .	6	Post hydrant . . . . .	26	
$1\frac{1}{2}$ " . . . . .	19	Boston Lowry hy-		
2 " . . . . .	18	drant . . . . .	6	
	—		—	61
	956			

In addition to the above mentioned work, the Machine, Carpenter, Paint, Plumbing, and Blacksmith shops performed much work of a miscellaneous nature in the maintenance and improvement of the property of the Water Department. Some of the important items are as follows :

- Painted building in East Boston yard.
- Razed ice-house and removed material of the same at East Boston.
- Painted and whitewashed the different shops and buildings in the Albany-street yard.
- Made large oak cabinet to hold plans.
- Painted gate-house, fence, and telephone poles at Parker Hill reservoir.
- Whitewashed tool-house at Charlestown yard.
- Laid new floors in wash and carriage rooms at Charlestown yard.
- Made and lettered 600 " paint " signs, to be attached to newly painted hydrants.
- Scraped and painted second-hand pipes and specials reclaimed from the ground.
- Painted 1,113 miscellaneous hydrant castings.
- Made 12,392 repairs on tools, mostly picks, bars, and chisels. Aggregate cost of same, \$1,690.88.
- Performed 941 odd jobs of varying extent about the Albany-street yard, maintaining and improving the property of the department. Aggregate cost of same, \$907.74.
- Performed 87 odd jobs of varying extent in and about the various reservoirs and district yards of the department. Aggregate cost of same, \$711.68.
- Made 270 tools for various purposes. Aggregate cost, \$600.66.
- Made patterns for hydrants, gates, caps, etc. Aggregate cost, \$564.16.
- Made 47 test-bars of composition for expert tests of tensile strength.
- Performed work of miscellaneous character for the Income Division and Engineering Department amounting to a total cost of \$55.05.



## REPORT OF THE ENGINEER.

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ENGINEERING DEPARTMENT,  
50 CITY HALL, February 2, 1903.

MR. EUGENE S. SULLIVAN,  
*Water Commissioner :*

SIR, — I herewith submit the following report for the past year of the work done and records kept :

Some of the most important work done is as follows :

The 40-inch low service main in Brookline avenue was originally laid in 1859, and for about 1,800 feet where imbedded in soft marsh mud, it had become corroded so as to be dangerously weak. For a distance of 1,370 feet southerly from Butler street it has been relaid ; the new location is in clean earth, entirely above the mud. It is intended to finish the work during the coming year.

The 30-inch high service main in Washington street, Dorchester, was extended from Talbot avenue to Burt street, a distance of 1,515 feet, connection being made with the local distribution system at Rockwell street. About 1,000 feet of 30-inch low service main was laid in Southampton street where the grade of the street was raised over the tracks of the N.Y., N.H. & H. R.R., and a short length of 30-inch low service main was laid in Southampton street across the second waterway west of the N.Y., N.H. & H. R.R., replacing a 24-inch spiral steel pipe which had failed.

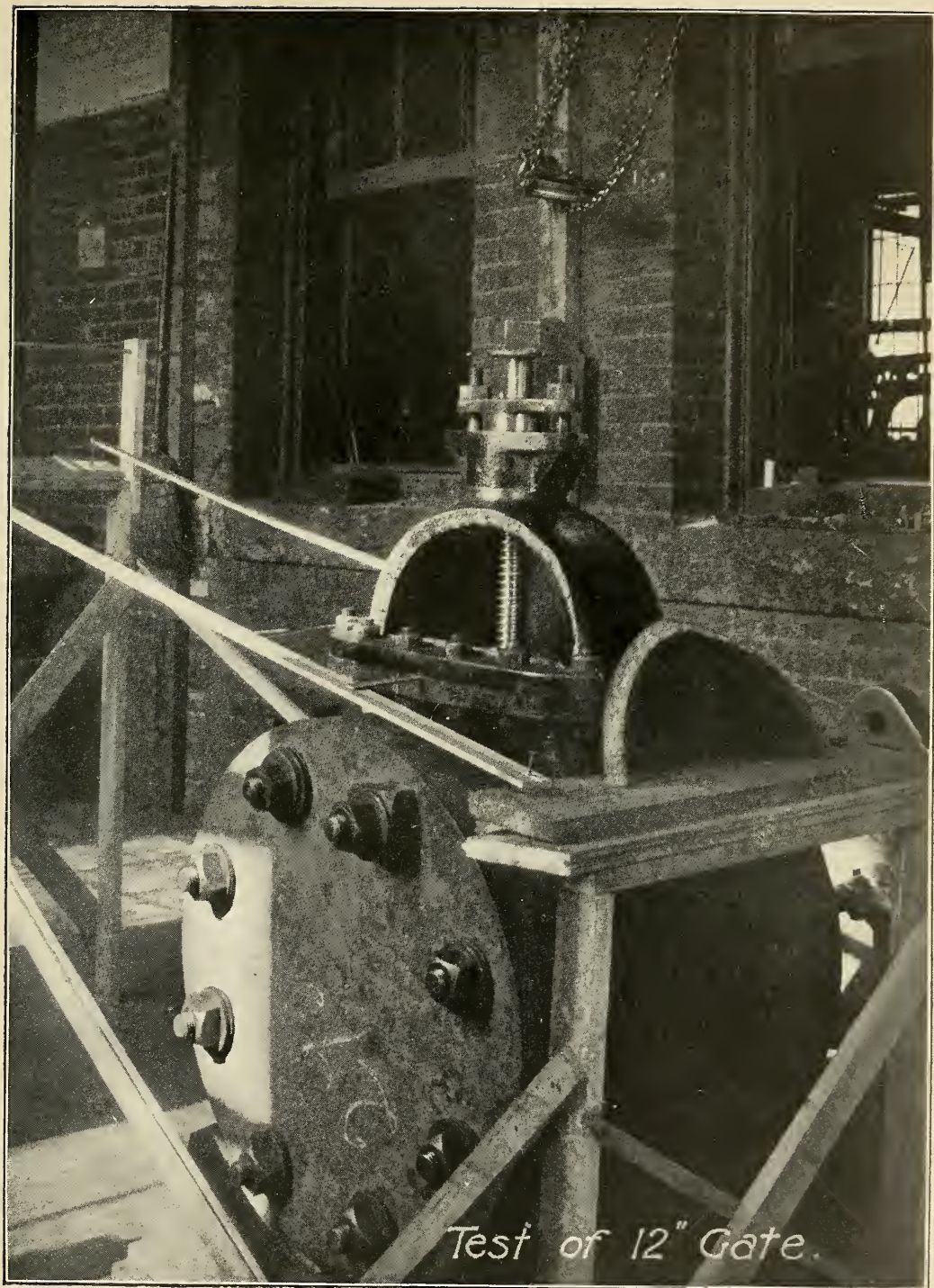
A 16-inch low service main was laid in Bedford street from Summer to Washington street.

A 16-inch low service main was laid in Harrison avenue from Northampton to Dudley street, replacing a 6-inch main.

A 16-inch low service main was laid in Dorchester avenue from Second to A street, replacing a 6-inch main.

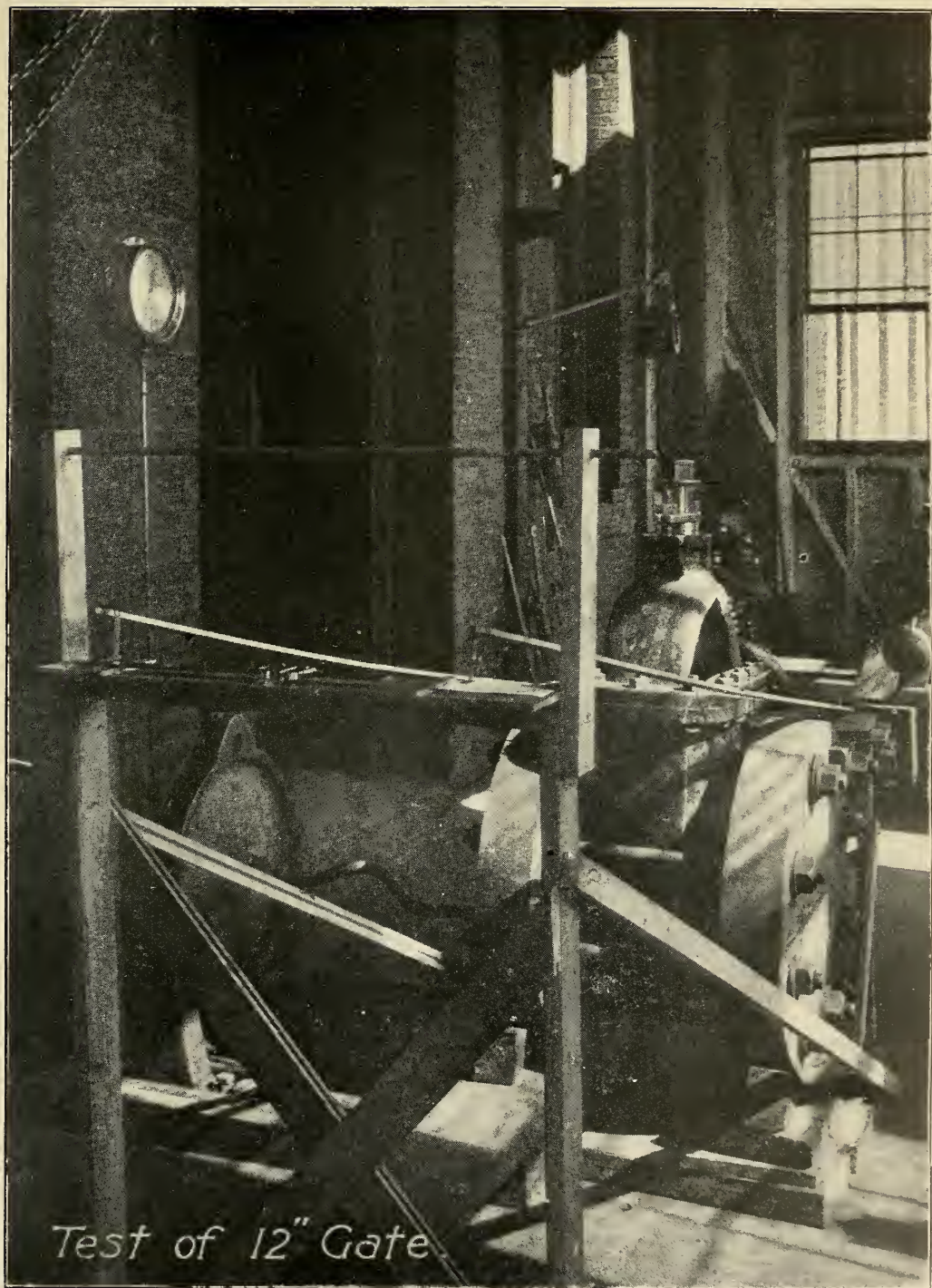
A 16-inch low service main was laid in Columbia road from Douglass to Vale street, completing the 16-inch line on the southerly side of South Boston.

Changes in and additions to various underground systems are continually being made, and the question of the safe maintenance of our water mains under difficulties is ever







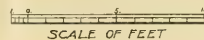


*Test of 12" Gate*

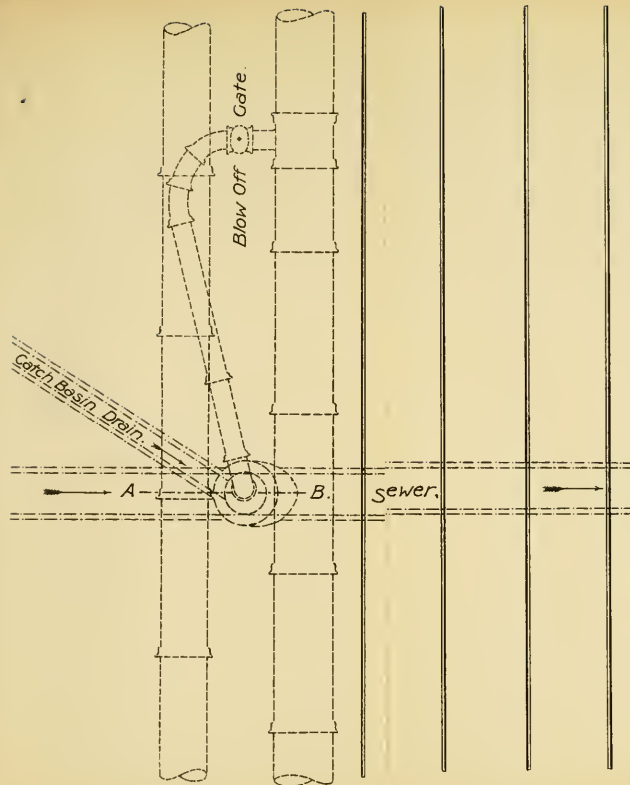




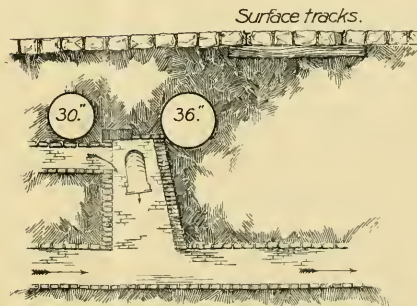
CITY of BOSTON, ENGINEERING DEPT  
 PLAN and SECTION,  
 SHOWING CONDITION AT POINT OF BREAK,  
 IN  
 36" LOW SERVICE MAIN,  
 IN  
 TREMONT ST. AT W. NEWTON ST.,  
 SEPT. 26, 1902.



*William Jackson*  
*City Engineer*



30 inch Main. 36 inch Main. Surface tracks, B.E. Ry.



Cross Section through Line A.B.



present; much time has been spent during the year on account of work of this kind. Some of the larger changes in water mains were made necessary in the case of subway construction on State street and the grade crossings at Blue Hill avenue and Oakland street.

Since 1896 a consistent policy has been followed of relaying mains too small for present demands made upon them for fire protection, and mains whose strength have been impaired by the soil in which they were laid; the result has been that a very great improvement in the fire service of the city has been made. The notably weak places in the system have already been strengthened, but much work of this kind still remains to be done to adequately meet the demands of the immediate future.

The following statement shows the relaying which has been done since 1896 in the City Proper and South End, exclusive of a large amount of work in other portions of the city:

28,000	feet	16	inch,	replacing	6	inch,	8	inch	and	12	inch.
60,500	"	12	"	"	4	inch,	6	inch,	8	inch	and 12 inch.
16,100	"	10	"	"	4	inch	and	6	inch.		
23,400	"	8	"	"	4	inch	and	6	inch.		
20,288	"	6	"	"	4	inch	and	6	inch.		

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148,288 feet, or 28.1 miles.

The accompanying map, at end of report, shows the work done in this line, and also the general distribution system of this portion of the city.

A break occurred in the 30-inch main on Tremont street at West Newton, under conditions shown in cut opposite. The following are the results of tests made to determine the holding power of caps on ends of pipe; the caps and spigot ends used were of standard B.W.W. design, except in the cases mentioned where pipes were used without beads: the lead joints were 2 inches by  $\frac{1}{2}$  inch (unless otherwise stated), and were made to correspond as closely as possible to the actual practice of the Water Department. Pressure was supplied by a small hand force-pump.



## Results of Tests.

Size of cap.	Number of test.	Leaking began, pounds per sq. in.	Movement of cap. ins.	Total pressure, pounds per sq. in.	Total movement of cap. ins.	REMARKS.
4 in.	1	500	1-16	600	$\frac{1}{4}$	Leak exceeded capacity of pump.
4 "	2	.....	.....	25	.....	Joint made while iron was hot, after melting off cap.
4 "	2 <sup>1</sup>	None	None	900	None	No. 2 recaulked.
4 "	3	750	"	800	$\frac{1}{4}$	Leak exceeded capacity of pump.
4 "	4	800	"	860	$\frac{1}{4}$	" " " " "
4 "	5	650	"	700	$\frac{1}{4}$	" " " " "
4 "	1	1000	1-16	1220	$1\frac{5}{8}$	Without bead on pipe—surface of pipe quite rough.
6 "	1	500	1-16	550	$\frac{1}{8}$	Leak exceeded capacity of pump.
6 "	2	550	$\frac{1}{8}$	600	$\frac{1}{4}$	" " " " "
6 "	3	525	1-16	550	$\frac{1}{4}$	" " " " "
6 "	4	600	None	650	$\frac{3}{8}$	" " " " "
6 "	5	530	"	550	$\frac{1}{4}$	" " " " "
6 "	6	550	"	600	$\frac{1}{4}$	" " " " "
6 "	1	400	"	420	$\frac{1}{4}$	Without bead on end pipe; leak exceeded capacity of pump.
6 "	2	400	"	450	$\frac{1}{4}$	Without bead on end pipe; leak exceeded capacity of pump.
6 "	3	.....	"	900	.....	Without bead on end pipe; leak stopped at 600—cap moved nearly off pipe before leaking.
6 "	4	525	"	550	$\frac{1}{8}$	Without bead on end pipe; leak exceeded capacity of pump.
8 "	1	400	"	420	$\frac{1}{4}$	Leak exceeded capacity of pump.
8 "	2	400	"	430	$\frac{1}{8}$	" " " " "
8 "	3	400	"	420	$\frac{1}{4}$	" " " " "
8 "	4	400	"	410	$\frac{1}{4}$	" " " " "
8 "	5	420	"	450	$\frac{1}{4}$	" " " " "
8 "	1	340	"	360	$\frac{1}{4}$	Lead joint $3\frac{1}{2}$ in. x $\frac{1}{2}$ in.; leak exceeded capacity of pump.
8 "	2	260	"	300	$\frac{1}{4}$	Lead joint $3\frac{1}{2}$ in. x $\frac{1}{2}$ in.; caulking defective.
8 "	2 <sup>1</sup>	.....	.....	850	.....	Lead joint $3\frac{1}{2}$ in. x $\frac{1}{2}$ in.; No. 2 recaulked—cap broke, having moved $\frac{1}{4}$ in.
8 "	1	550	None	600	$\frac{2}{8}$	Without bead on pipe; leak exceeded capacity of pump.
8 "	2	350	"	400	$\frac{1}{8}$	Without bead on pipe; leak exceeded capacity of pump.

Results of Tests. — *Continued.*

Size of cap.	Number of test.	Leaking began, pounds per sq. in.	Movement of cap. ins.	Total pressure, pounds per sq. in.	Total movement of cap. ins.	REMARKS.
8 in.	3	500	None	550	$\frac{1}{2}$	Without bead on pipe; leak exceeded capacity of pump.
8 "	4	380	"	400	$\frac{1}{8}$	Without bead on pipe; leak exceeded capacity of pump.
10 "	1	300	"	350	$\frac{1}{4}$	Leak exceeded capacity of pump.
10 "	2	200	"	300	$\frac{1}{4}$	" " " " "
10 "	3	330	"	350	$\frac{1}{4}$	" " " " "
10 "	4	225	"	350	1.16	" " " " "
10 "	4 <sup>1</sup>	.....	.....	400	.....	No. 4 recaulked; leak exceeded capacity of pump.
10 "	4 <sup>2</sup>	.....	.....	400	.....	No. 4 <sup>1</sup> recaulked; leak exceeded capacity of pump.
10 "	4 <sup>3</sup>	450	.....	700	.....	No. 4 <sup>2</sup> recaulked; 12 in. cap on opposite end of pipe broke.
10 "	1	300	None	325	$\frac{1}{2}$	Lead joint $3\frac{1}{2}$ in. x $\frac{1}{2}$ in.; leak exceeded capacity of pump.
10 "	2	250	"	700	$\frac{3}{4}$	Lead joint $3\frac{1}{2}$ in. x $\frac{1}{2}$ in.: leak exceeded capacity of pump.
10 "	2 <sup>1</sup>	.....	.....	750	.....	No. 2 recaulked; cap started on opposite end of pipe.
10 "	2 <sup>2</sup>	.....	.....	800	.....	No. 2 <sup>1</sup> recaulked; cap broke on opposite end of pipe.
10 "	2 <sup>3</sup>	.....	.....	900	.....	No. 2 <sup>2</sup> recaulked; cap started on opposite end of pipe.
10 "	1	230	None	240	$\frac{1}{4}$	Without bead on end pipe; joint 2 in. x $\frac{5}{8}$ in.
12 "	1	240	"	250	$\frac{1}{8}$	Leak exceeded capacity of pump.
12 "	2	225	"	250	$\frac{1}{4}$	" " " " "
12 "	3	230	"	240	$\frac{1}{4}$	" " " " "
12 "	4	180	"	220	$\frac{1}{4}$	" " " " "
12 "	5	210	"	220	$\frac{1}{8}$	" " " " "
12 "	6	200	"	220	$\frac{1}{8}$	" " " " "
12 "	7	200	"	230	$\frac{1}{8}$	" " " " "
12 "	8	170	"	225	$\frac{1}{4}$	" " " " "
12 "	9	250	"	260	$\frac{1}{4}$	" " " " "
12 "	10	200	"	220	$\frac{1}{4}$	" " " " "
12 "	10 <sup>1</sup>	.....	.....	240	.....	No. 10 recaulked; leak exceeded capacity of pump.
12 "	10 <sup>2</sup>	.....	.....	350	.....	No. 10 <sup>1</sup> recaulked; leak exceeded capacity of pump.

Results of Tests. — *Concluded.*

Size of cap.	Number of test.	Leaking began, pounds per sq. in.	Movement of cap. ins.	Total pressure, pounds per sq. in.	Total movement of cap. ins.	REMARKS.
12 in.	10 <sup>3</sup>	330	.....	700	$\frac{3}{4}$	No. 10 <sup>3</sup> recaulked; leak exceeded capacity of pump.
12 "	1	240	None	250	.....	Lead joint $3\frac{1}{2}$ in. x $\frac{1}{2}$ in.; leak exceeded capacity of pump.
12 "	2	160	"	200	.....	Lead joint $3\frac{1}{2}$ in. x $\frac{1}{2}$ in.; leak exceeded capacity of pump.
12 "	2 <sup>1</sup>	400	.....	550	.....	No. 2 recaulked; cap on opposite end of pipe broke.
12 "	3	.....	.....	370	...	Lead joint $3\frac{1}{2}$ in. x $\frac{1}{2}$ in.; leak exceeded capacity of pump.
12 "	3 <sup>1</sup>	.....	.....	775	.....	No. 3 recaulked; 10-in. cap broke.
12 "	1	225	None	275	$\frac{1}{4}$	Without bead on pipe; outside pipe rough.
12 "	2	260	"	270	$\frac{1}{8}$	" " " " " "
16 "	1	120	"	150	$\frac{1}{4}$	Leak exceeded capacity of pump.
16 "	2	200	1-16	210	$\frac{1}{4}$	" " " " "
16 "	3	150	None	160	1-16	" " " " "
16 "	4	150	"	160	1-16	" " " " "
16 "	4 <sup>1</sup>	.. ..	.....	200	.....	No. 4 recaulked; leak exceeded capacity of pump.
16 "	4 <sup>2</sup>	.....	.....	240	.....	No. 4 <sup>1</sup> recaulked; leak exceeded capacity of pump.
16 "	5	110	None	120	.....	Leak exceeded capacity of pump.
16 "	6	150	"	160	$\frac{1}{4}$	" " " " "
16 "	7	140	"	150	$\frac{1}{4}$	" " " " "
16 "	8	150	"	160	$\frac{1}{8}$	" " " " "
16 "	8 <sup>1</sup>	.....	.....	150	.....	No. 8 recaulked; leak exceeded capacity of pump.
16 "	8 <sup>2</sup>	.....	.....	200	.....	No. 8 <sup>1</sup> recaulked; leak exceeded capacity of pump.
16 "	8 <sup>3</sup>	.....	.....	220	.....	No. 8 <sup>2</sup> recaulked; leak exceeded capacity of pump.
16 "	1	150	None	160	$\frac{1}{2}$	Lead joint 4 in. x $\frac{1}{2}$ in.
16 "	2	160	"	500	.....	Lead joint 4 in. x $\frac{1}{2}$ in.; became tight at 400 pounds. At 500 pounds cap nearly off end of pipe, lead having moved only $\frac{1}{4}$ in.

A test was made to determine the strength of the new style of 12-inch gate which was designed in this office, and is manufactured in the machine shop of the Water Department. The composition plug (made of 40 parts copper,  $3\frac{1}{2}$  parts tin,  $1\frac{1}{2}$  parts zinc,  $\frac{1}{4}$  part lead) was first tested by bolting a "test ing" head or cap to one bell of the gate, seating the plug and applying pressure to the space between cap and plug; the elastic limit of the composition was reached at a pressure between 525 and 550 pounds per square inch; at 725 pounds per square inch a leak developed in the body of the gate and the test was discontinued. The deflection at centre of plug was measured for each 25 pounds increase of pressure. The high pressure noticeably dished or curved the centre web of plug but no crack developed.

The cast-iron shell was tested with the plug open and with testing heads on each bell securely tied together by steel rods; the deflection of the shell for each 25 pounds increase of pressure was measured on each side separately at the centre of the flanges between body and bonnet of gate. At a pressure of 775 pounds per square inch a crack developed in the flange of the body, but did not extend into the body proper; at 850 pounds per square inch three cracks developed in the flanges and two in the body of gate, at the same time one entire side of the bonnet was blown out, flying across the room with considerable force, the water falling to the floor quietly. The deflections of the iron shell were uniform until fracture occurred. Previous to applying the high pressure water was allowed to run freely through the stuffing-box in order to expel the air, and once during the test it was necessary to tighten up the stuffing-box in order to prevent leakage.

There are decided indications of danger from electrolytic action in the vicinity of the new power house of the Boston Elevated Railway Company on Commercial street and, also, in the vicinity of their other power stations. However, during the past year, the only damage by electrolysis which has been discovered has been to a few service pipes. The electrical surveys that have been made have not shown the conditions to be more alarming than for the past few years. A large number of observations and tests of the condition of old mains have failed to discover any evidence of serious damage. In view of the fact that serious damage has been done during the past year on the Metropolitan System and to pipes in surrounding towns, it is surprising that more evidence of damage from electrolysis has not been found.

Respectfully submitted,

WILLIAM JACKSON.

*City Engineer.*



*Monthly Rainfall in Inches during 1902 in Various Places in Eastern Massachusetts.*

Places.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total.
Framingham .....	2.71	6.65	6.45	4.62	1.79	2.42	2.97	4.07	4.34	4.20	1.36	6.61	48.19
Dam 4, Ashland .....	2.34	6.34	4.72	3.79	1.62	3.25	3.05	2.79	3.99	4.32	1.43	6.32	43.96
Cordaville .....	2.56	5.72	5.48	4.26	2.09	3.00	2.68	3.04	5.44	4.86	1.59	6.78	47.50
Lake Cochituate .....	2.11	6.67	5.04	3.66	1.24	2.42	3.53	3.39	4.91	4.05	1.37	6.22	44.61
Chestnut Hill Reservoir .....	1.98	7.76	5.27	3.97	1.11	2.74	3.52	2.96	3.31	4.64	1.56	5.43	44.25
Spot Pond .....	2.22	7.56	4.90	4.70	1.15	2.33	2.76	3.80	3.44	4.72	1.33	5.86	44.77
Cambridge Observatory .....	2.36	4.76	6.40	3.57	1.26	2.08	3.09	2.86	3.00	4.47	1.19	5.99	41.03
Waltham, Boston Manufacturing Company .....	1.92	4.59	3.71	4.17	1.24	2.72	3.59	3.83	4.93	4.88	1.09	5.04	41.71
Lowell, Locks and Canals Company .....	2.27	6.16	5.28	5.47	2.37	2.11	3.56	5.16	6.29	5.29	0.86	6.29	51.11
Average of above nine places .....	2.27	6.25	5.25	4.25	1.54	2.56	3.19	3.54	4.41	4.60	1.31	6.06	45.24

*Average Stated Monthly Heights, in Feet, above City Base, to which Water Rose at Different Stations on the Boston Water Works.*



<sup>1</sup> BOSTON WATER BOARD.

ORGANIZED JULY 31, 1876.

TIMOTHY T. SAWYER, from July 31, 1876, to May 5, 1879; and from May 1, 1882, to May 4, 1883.

\* LEONARD R. CUTTER, from July 31, 1876, to May 4, 1883.

\* ALBERT STANWOOD, from July 31, 1876, to May 7, 1883.

\* FRANCIS THOMPSON, from May 5, 1879, to May 1, 1882.

WILLIAM A. SIMMONS, from May 7, 1883, to August 18, 1885.

GEORGE M. HOBBS, from May 4, 1883, to May 4, 1885.

JOHN G. BLAKE, from May 4, 1883, to August 18, 1885.

WILLIAM B. SMART, from May 4, 1885, to March 18, 1889.

\* HORACE T. ROCKWELL, from August 25, 1885, to April 25, 1888.<sup>3</sup>

THOMAS F. DOHERTY, from August 26, 1885, to May 5, 1890; and from May 4, 1891, to July 1, 1895.

ROBERT GRANT, from April 25, 1888, to July 18, 1893.<sup>3</sup>

PHILIP J. DOHERTY, from March 18, 1889, to May 4, 1891.

\* JOHN W. LEIGHTON, from May 5, 1890, to July 1, 1895.

WILLIAM S. McNARY, from August 15, 1893, to November 5, 1894.<sup>3</sup>

CHARLES W. SMITH, from January 23, 1895, to July 1, 1895.

<sup>1</sup> WATER COMMISSIONERS.

CHARLES W. SMITH, from July 1, 1895, to January 20, 1896.<sup>3</sup>

JEREMIAH J. MCCARTHY (Acting), from January 20 to February 1, 1896.

JOHN R. MURPHY, from February 1, 1896, to October 17, 1899.<sup>3</sup>

BENJAMIN W. WELLS (Acting), from October 17, 1899, to December 28, 1899.

\* AUGUSTUS P. MARTIN, from December 28, 1899, to March 13, 1902.<sup>2</sup>

JAMES DONOVAN (Acting), from March 14 to 17, 1902.

EUGENE S. SULLIVAN, from March 17, 1902, to present time.

*Assistant Water Commissioners.*

JEREMIAH J. MCCARTHY, from July 1, 1895, to January 20, 1896.

EDWARD C. ELLIS, from February 17, 1896, to November 1, 1900.

\* MELVIN P. FREEMAN, from February 7, 1900, to March 9, 1902.<sup>3</sup>

WILLIAM H. OAKES, from November 1, 1900, to March 9, 1902.<sup>3</sup>

EUGENE S. SULLIVAN, from March 10 to March 17, 1902.

ISAAC ROSNOSKY, from March 10, 1902, to present time.

JOHN J. LEAHY, from March 21, 1902, to present time.

*Chief Clerk and Secretary.*

WALTER E. SWAN.

*General Superintendent Income Division.*

JOS. H. CALDWELL.

*Superintendent Distribution Division.*

WILLIAM J. WELCH.

*City Engineer and Engineer of the Department.*

WILLIAM JACKSON.

<sup>1</sup> Under Chap. 449 of the Acts of 1895 the Boston Water Board was abolished, and the Water Supply and Water Income Departments consolidated and placed under the charge of one Water Commissioner.

\* Deceased.

<sup>2</sup> Died in office.

<sup>3</sup> Resigned.



## GENERAL STATISTICS.

## BOSTON WATER DEPARTMENT.

Daily average amount used through meters, gallons . . . . .	17,521,400
Number of services . . . . .	89,337
Number of meters . . . . .	4,674
Number of motors . . . . .	129
Number of elevators . . . . .	578
Length of supply and distributing mains, in miles . . . . .	727.2
Number of public fire hydrants in use . . . . .	7,496
Yearly revenue from annual water rates . . . . .	\$1,318,803 21
Yearly revenue from metered water . . . . .	\$1,009,039 09
Percentage of total revenue from metered water, . . . . .	43.3
Yearly expense of maintenance . . . . .	\$660,918 93











Jun 13 1913

